

# answers<sup>2</sup>

Operating manual

## CELSIUS R630 / V810

English



FUJITSU COMPUTERS  
SIEMENS

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... any technical problems or other questions which you would like to be clarified?

Please contact:

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# **CELSIUS R630 / V810**

## **Operating manual**

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Preparing for use

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Troubleshooting  
and tips

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# Your CELSIUS R/CELSIUS V...

...is available with various configuration levels with different hardware and software. In addition, you can install accessible drives (e.g. DVD drive), hard disks and other boards.

This operating manual tells you how to put your workstation into operation and how to operate it in daily use. This description applies for all configuration levels. Depending on the configuration level chosen some of the hardware components described may not be available on your PC. Please observe the notes on your operating system.

Depending on the configuration selected, the operating system is preinstalled on your hard disk (e.g. Windows XP).

Your workstation has a number of security features to ensure that no unauthorised persons can access your data. The security functions in the *BIOS Setup* also allow you to protect your data by means of passwords. In addition, you can also mechanically lock your workstation. Systems with a SmartCard reader offer additional protection.

*DeskUpdate* allows you under some operating systems to easily and quickly install the latest drivers and operating system extensions with a few mouse clicks. *DeskUpdate* is contained on the "Drivers & Utilities" CD.

Additional information on this workstation is also contained in:

- in the "Getting Started" manual
- in the "Safety" manual
- in the "Ergonomics" manual
- in the "Warranty" manual
- in the operating manual for the monitor
- in the technical manual for the mainboard
- in the "BIOS Setup" manual
- in your operating system documentation
- in the information files (e.g. \*.TXT, \*.DOC, \*.WRI, \*.HLP)



You will find an electronic version of some of the listed manuals on the "User Documentation" or "Drivers & Utilities" CD.

You can access and view the required information using the *Acrobat Reader* program, which is also on the CD. If necessary, you can also make a print version of the manual.

## Notational conventions

The meanings of the symbols and fonts used in this manual are as follows:



indicates information which is important for your health or for preventing physical damage.



indicates important information which is required to use the system properly.

► Text which follows this symbol describes activities that must be performed in the order shown.

*Text in italics* indicates commands or menu items.

"Quotation marks" indicate names of chapters or terms.

---

# Important notes

In this chapter you will find information regarding safety which it is essential to take note of when working with your workstation.

## Safety notes



Pay attention to the information provided in the "Safety" manual and in the following safety notes.

During installation and before operating the device, please observe the instructions on environmental conditions in the "Technical data" chapter as well as the instructions in the "Preparing for use" chapter.

You may only operate the device, if the voltage for the device is set to the local mains voltage (see chapter "Technical data").

The main switch (if present) and the ON/OFF switch do not disconnect the workstation from the mains voltage. To completely disconnect the mains voltage, remove the power plug from the grounded mains outlet.

Remove the power plug before opening the device.

Replace the lithium battery on the mainboard in accordance with the instructions in the "Extensions to the mainboard" - "Replacing lithium battery" section.

Caution, components in the system can get very hot.

## Energy saving, disposal and recycling

Further information can be found on the "User Documentation" or "Drivers & Utilities" CD provided with your computer.

## CE marking



The shipped version of this device complies with the requirements of the EEC directives 89/336/EEC "Electromagnetic compatibility" and 73/23/EEC "Low voltage directive".

# FCC Class B Compliance Statement

The following statement applies to the products covered in this manual, unless otherwise specified herein. The statement for other products will appear in the accompanying documentation.

### NOTE:

This equipment has been tested and found to comply with the limits for a "Class B" digital device, pursuant to Part 15 of the FCC rules and meets all requirements of the Canadian Interference-Causing Equipment Standard ICES-003 for digital apparatus. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in strict accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Fujitsu Siemens Computers GmbH is not responsible for any radio or television interference caused by unauthorised modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by Fujitsu Siemens Computers GmbH. The correction of interferences caused by such unauthorised modification, substitution or attachment will be the responsibility of the user.

The use of shielded I/O cables is required when connecting this equipment to any and all optional peripheral or host devices. Failure to do so may violate FCC and ICES rules.

## Transporting the workstation



Transport all parts separately in their original packaging or in a packaging which protects them from knocks and jolts, to the new site. Do not unpack them until all transportation manoeuvres are completed.

## Cleaning the workstation



Turn off all power and equipment switches and pull the power plug out of the grounded mains outlets.

The inside of the workstation casing may only be cleaned by authorised, specially trained personnel.

Do not use any cleaning agents that contain abrasives or may corrode plastic.

Ensure that no liquid enters the system.

Wipe the casing with a dry cloth. If particularly dirty, use a cloth that has been moistened in mild domestic detergent and then carefully wrung out. Use disinfectant wipes to clean the keyboard and the mouse.

---

# Preparing for use



Please take note of the safety information in the "Important notes" chapter.

## Unpacking and checking the delivery

It is recommended not to throw away the original packaging material! It may be required for reshipment at some later date.

- ▶ Unpack all the individual parts.
- ▶ Check the delivery for damage incurred during transportation.
- ▶ Check whether the delivery agrees with the details in the delivery note.

Should you discover that the delivery does not correspond to the delivery note, notify your local sales outlet immediately.

## Steps for initial setup

Only a few steps are necessary to put your new workstation into operation for the first time:

- Select location for workstation and set up workstation
- Connect the monitor, mouse and keyboard
- Check the voltage at the mains outlet and connect the workstation to an electrical outlet
- Enable Workstation

You will learn more about the individual steps in the following sections.



### External devices

If you have received other devices in addition to your workstation (e.g. a printer or a modem), do not connect these until after the initial installation. The following sections contain a description of how to connect these external devices: "Connecting external devices to the serial port" and "Connecting external devices to the parallel port".

### Drives and boards

If you have received drives or boards with your Workstation, please do not install them until after initial installation. How to install drives and boards is described in the "System expansions" chapter.

# Setting up the workstation



When installing your workstation, give consideration to the recommendations and safety notes in the "Safety" booklet.

Set up the workstation only in its correct orientation. The points to observe are illustrated on the following pages.

We recommend that you place your device on a surface with good anti-slip qualities. In view of the multitude of different finishes and varnishes used on furniture, it is possible that the rubber feet will mark the surface they stand on.

Do not expose the workstation to extreme environmental conditions (see "Technical data" chapter).

Provide at least 200 mm of clearance in front of and behind the fan area of the casing to ensure adequate ventilation. In order to avoid overheating, do not cover the ventilation area of the monitor or the workstation.

Do not place several workstations one above the other.

## Connect the monitor, mouse and keyboard

The ports for the monitor, mouse, and keyboard are on the rear and front (USB ports, optional) of the workstation.



Keyboard port / purple



Monitor port / blue




PS/2 mouse port / green



USB port / black

## Connecting the monitor

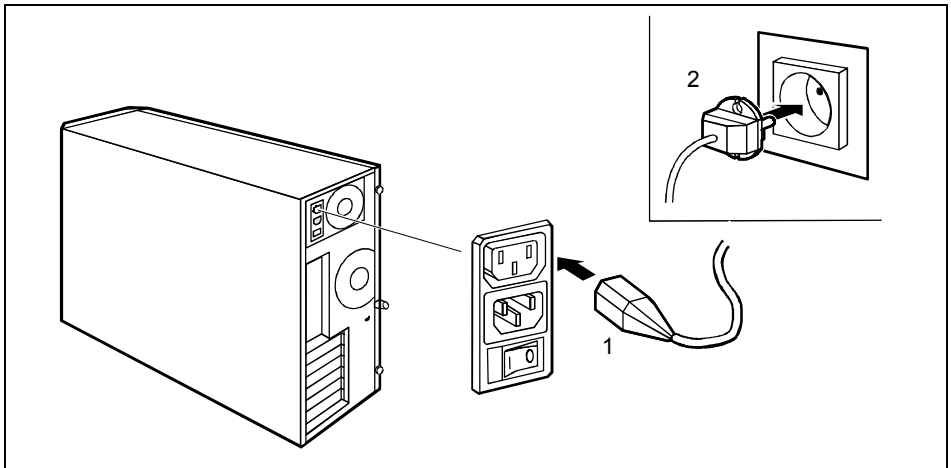
- ▶ Follow the instructions contained in the monitor manual to prepare the monitor for operation (e.g. connecting cables).
- ▶ Plug the data cable into the monitor port  of the workstation.
- ▶ Depending on the connector, plug the monitor power cable into either the monitor socket of the workstation (1) or the grounded mains outlet (2).



We recommend to connect the monitor power cable to the monitor socket of the workstation. The monitor is then switched off automatically when you switch the workstation off.



The monitor power cable may only be connected to the monitor socket if the monitor current consumption is smaller than 1,5 A with 230 V or 3 A with 115 V. The values for the monitor current consumption can be found in the technical data on the monitor or in the operating manual for the monitor.



The monitor will not be switched off together with the system. Switch off the monitor with its own ON/OFF switch.


### Connecting the mouse

Depending on the equipment level selected, your workstation will be supplied with a PS/2 mouse or a USB mouse.

#### Connecting a PS/2 mouse

- ▶ Connect the PS/2 mouse to the PS/2 mouse port  on the workstation.

#### Connecting USB mouse

- ▶ Connect the USB mouse to the USB port  on the workstation.




If you do not attach a mouse at the PS/2 mouse port, you can disable the mouse controller in the *BIOS Setup* in order to free the IRQ12 for a different application.

### Connecting a keyboard

Depending on the selected equipment level, your workstation will be supplied with a standard keyboard or a USB keyboard.


#### Connecting standard keyboard

Use the supplied keyboard cable only.

- ▶ Plug the other end of the keyboard cable (square plug) into the socket on the underside of the keyboard.
- ▶ Plug the round plug of the keyboard cable into the keyboard port  on the workstation.

#### Connecting USB keyboard

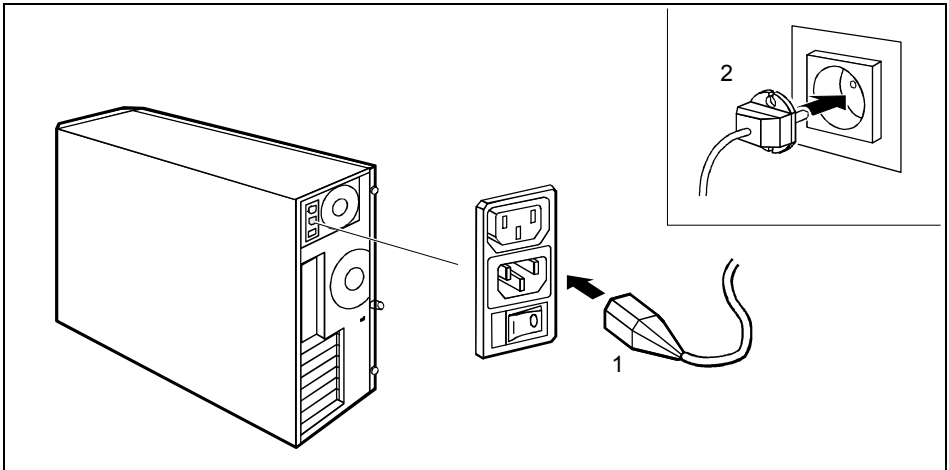
Use the supplied keyboard cable only.

- ▶ Plug the other end of the keyboard cable (square plug) into the socket on the underside of the keyboard.
- ▶ Insert the rectangular USB plug of the keyboard cable into the USB port  on the workstation.



## Connecting the workstation to the mains voltage

Your workstation sets itself automatically to the local rated voltage.



- ▶ Plug the power cable into the workstation (1).
- ▶ Plug the power plug into the grounded mains outlet (2).

## Initial switch-on: Software will be installed

If the workstation is integrated into a network, the user and server details as well as the network protocol are required. Contact your network administrator if you have any questions about these settings.

When you switch on your workstation for the first time the supplied software is installed and configured. You should plan some time for this, as this process must not be interrupted.



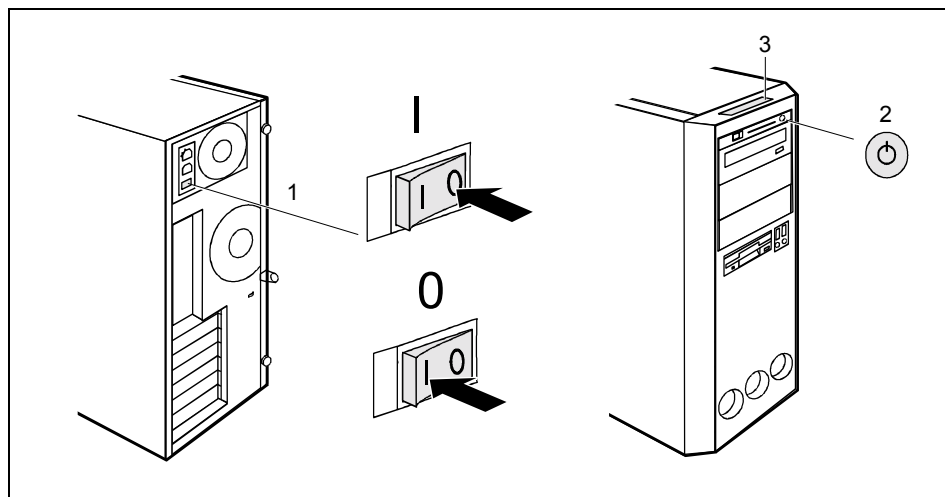
Once the installation has been started the workstation must not be switched off!  
During installation the workstation may only be rebooted when you are requested to do so!

Otherwise the installation will not be performed correctly. If a fault occurs during the installation, the contents of the hard disk must be completely restored.

You may require the Windows licence number during installation. This number is located on a sticker on your workstation.

### Switching on monitor and workstation

- ▶ Switch the monitor on (see the operating manual for the monitor).
- ▶ Switch on the workstation. To do this, follow the instructions below.



1 = Main power switch

2 = ON/OFF switch

3 = LCD display

0 = Workstation is switched off

I = Workstation is ready-to-operate

- ▶ Press the main switch (1) on the back of the workstation.
- ▶ Press the ON/OFF switch (2) on the front of the workstation.

The LCD lights up: The workstation is on. Up to seven symbols are displayed, depending on the operating state (see chapter "Indicators on the workstation").

## Installing the software

- During installation, follow the instructions on screen.

Consult the operating system manual if there is anything unclear about the requested input data.



You will find further information about the system, drivers, utilities, updates, manuals etc. on the "Drivers & Utilities" CD supplied.

## Connecting external devices



Read the documentation on the external device before connecting it. The power plug must be removed before connecting external devices, apart from USB devices.

Do not either connect or disconnect cables during storms.

Always take hold of the actual plug. Never unplug a cable by pulling the cable itself.

Connect and disconnect the cables in the order described below.

### Connecting cables

- Turn off all power and equipment switches.
- Remove all power plugs from the mains outlets.
- Connect all cables at the workstation and peripherals. Under all circumstances, please observe the safety notes provided in the "Important notes" chapter.
- Plug all data communication cables into the utility sockets.
- Plug all power cables into the grounded mains outlets.

### Disconnecting cables

- Turn off all power and equipment switches.
- Remove all power plugs from the mains outlets.
- Unplug all data communication cables from the utility sockets.
- Disconnect all cables from the workstation and peripherals.



USB devices are hot-pluggable. This allows cables from USB devices to be connected and disconnected with the system switched on. Additional information can be found in the "Connecting external devices to the USB ports" section and in the documentation for the USB devices.

### Connections on the workstation

The ports for external devices are on the rear and on the front of the workstation. The ports available on your workstation depend on the configuration level you have selected. The standard ports are marked with the symbols shown below (or similar). Exact details of the position of the ports are supplied in the technical manuals for the boards.



Keyboard port, purple



Serial port 1, teal or turquoise



Monitor port, blue



Headphones port, orange or light green



Audio output (Line out), light green



Game port, gold



USB - Universal Serial Bus, black



IEEE 1394 FireWire



Some of the devices that you connect require special drivers (see the operating system and device documentation).



PS/2 mouse port, green



Serial port 2, teal or turquoise



Parallel port/Printer, burgundy



Microphone jack, pink or red



Audio input (Line in), light blue



SCSI connection




LAN connector



Digital audio line output, yellow

## Connecting external devices to the serial port

External devices can be connected to the serial port (e.g. a modem).

- ▶ Connect the data cable to the external device.
- ▶ Connect the data cable to the serial port .

For an exact description of how to connect external devices to the serial port, please refer to the device documentation.



### Settings of the serial port


If you need to change the settings of the serial port (e.g. address, interrupt), you can do so in the *BIOS Setup*. The settings for the port are described in the technical manual for the mainboard or in the "BIOS Setup" manual.

### Device drivers

The devices connected to the serial port require drivers. Your operating system already includes many drivers. Nevertheless, if the driver you need is not on the hard disk, please install it from the data carrier supplied with the device or with the application programme.

## Connecting external devices to the parallel port

External devices can be connected to the parallel port (e.g. a printer).

- ▶ Connect the data cable to the external device.
- ▶ Connect the data cable to the parallel port .

For an exact description of how to connect external devices to the parallel port, please see the device documentation.



### Settings of the parallel port

If you need to change the settings of the parallel port (e.g. address, interrupt), you can do so in the *BIOS Setup*. The settings for the port are described in the technical manual for the mainboard or in the "BIOS Setup" manual.

### Device drivers

The devices connected to the parallel port require drivers. Your operating system already includes many drivers. Nevertheless, if the driver you need is not on the hard disk, please install it from the data carrier supplied with the device or with the application programme.


### Connecting external devices to the USB ports

You can connect a wide range of external devices to the USB port (e.g. printer, scanner, modem or keyboard).



USB devices are hot-pluggable. This allows cables from USB devices to be connected and disconnected with the system switched on.

Additional information can be found in the documentation for the USB devices.

- ▶ Connect the data cable to the external device.
- ▶ Connect the data cable to the USB port .



#### Device drivers


The devices you connect to the USB ports usually require no driver of their own, as the required software is already included in the operating system. However, if the USB device requires its own software, please install it from the data carrier provided with the USB device.

---

# Operation

## Switching the workstation on

- ▶ If necessary, switch the monitor on (see the operating manual for the monitor).
- ▶ Press the ON/OFF switch on the front of the workstation.

The corresponding indication appears on the LCD (see chapter "Indicators on the workstation") or the operating indicator  lights, the workstation starts up.

## Switching off the workstation

- ▶ Shut down the operating system properly. For Windows: select *Shut Down* from the *Start* menu.
- ▶ If the operating system does not automatically switch the workstation off, turn the workstation ready-to-use when requested to do so by pressing the ON/OFF switch.

If the workstation is ready-to-use, the workstation consumes very little power.



The ON/OFF switch does not separate the workstation from the mains voltage. To completely disconnect the mains voltage, remove the power plug from the socket.

- ▶ If necessary, switch the monitor off (see the operating manual for the monitor).

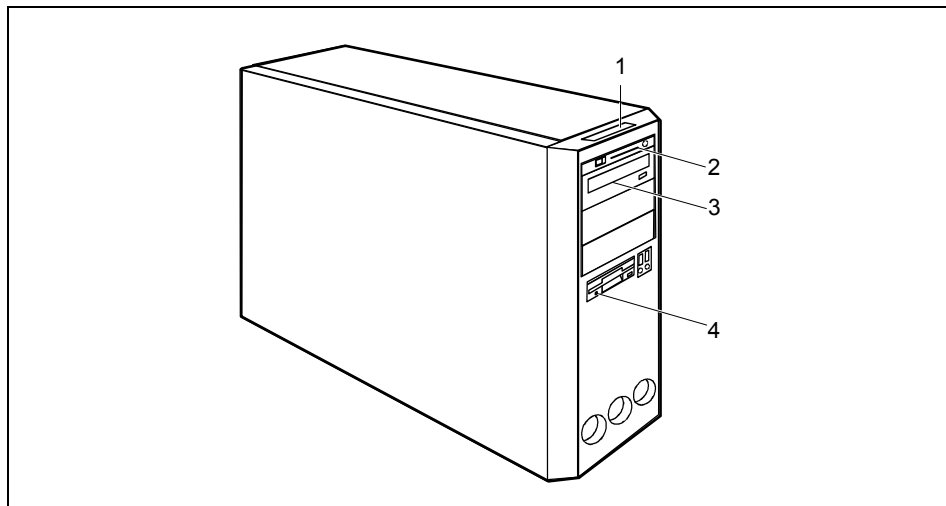
## Placing a workstation (with soft power off function) in a ready-to-operate state by means of software

With the soft power off function the workstation automatically switches off (standby) or switches into the energy-saving mode after the operating system is shut down. Requirements: Your system must support switching off with software and this functionality must be enabled in *BIOS Setup*. The soft power off software may also need to be installed on Windows NT systems.

You can also switch your workstation into the standby mode via the *DeskView* software with the *DeskOff* programme.

# Indicators on the workstation

The indicators are on the front of the workstation. Which indicators are available on your workstation depends on the configuration level you have selected.



1 = LCD / status indicator panel

2 = SmartCard reader indicator

3 = CD-ROM indicator

4 = Floppy disk indicator

## 1 - LCD / status indicator panel

The LCD lights up as soon as the workstation is switched on. Up to seven symbols are displayed, depending on the operating state.



### Power on

appears on the LCD as soon as the workstation is switched on.



### Standby/ Energy saving mode

appears on the LCD as soon as the workstation is in energy saving mode. The workstation can be switched on with the ON/OFF switch.



### Hard disk

appears on the LCD as soon as the hard disk is accessed.



**Error**

appears on the LCD if there is a hardware error in the workstation or if a critical hardware state is reached (e.g. fan failure, high temperature). You can use DeskView to get detailed information on the problem that occurred. If in any doubt, consult your administrator.

**LAN connection**

appears on the LCD as soon as the workstation is connected to a LAN.

**LAN access**

appears on the LCD as soon as the workstation sends or receives data over the LAN.

**Message**

when software that supports this function is used, the appearance of this symbol on the display indicates that an incoming message (mail, fax) is waiting.

**Reserved**

is reserved for future use.

**2 - SmartCard reader indicator**

The indicator lights up if a SmartCard is inserted.

The indicator flashes if no SmartCard is inserted.

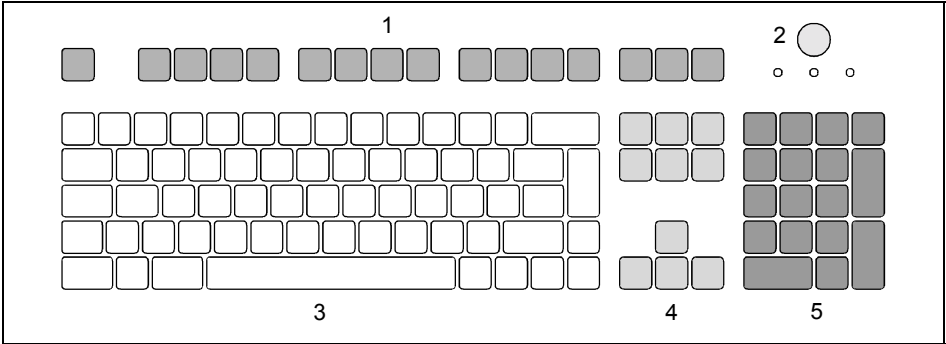
**3 - CD-ROM indicator**

The indicator lights up when the CD-ROM drive of the workstation is accessed. You may only remove the CD when the indicator is dark.

**4 - Floppy disk indicator**

The indicator lights up when the floppy disk drive of the workstation is accessed. You may only remove the floppy disk when the indicator is unlit.

# Keyboard



- 1 = Function keys
- 2 = Power button (optional)
- 3 = Alphanumeric keypad
- 4 = Cursor keys
- 5 = Numeric keypad (calculator keypad)

**i** The illustrated keyboard is an example and may differ from the model you use.

## Important keys and key combinations

The following description of keys and key combinations refers to MS Windows. Details of other keys and key combinations can be found in the documentation of the relevant application programme.



### ON/OFF switch (optional)

Depending on the setting in the *BIOS Setup*, the system can be switched on, off, or on and off with this button. Some operating systems allow you to configure additional functions of the ON/OFF switch in the Control Panel.



On some keyboards the ON/OFF switch can only be used with ACPI. Otherwise the key is inoperative. The mainboard must support this function.



### Enter key

confirms the marked selection. The enter key is also referred to as the "Return" key.



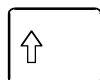
### Start key

calls up the Windows *START* menu.



### Menu key

invokes the menu for the marked item (Windows).



### Shift key

enables upper-case letters and the upper key symbols to be used.



### Alt Gr (e.g. German keyboard)

produces a character shown on the right-hand side of a key (e.g. the character @ on the key **Q**).

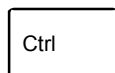


### Num key

Switches the numeric key pad between the number ("Num" indicator lights up) and the editing modes ("Num" indicator does not light up).

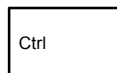
When the Num Lock indicator is lit the digit and comma keys are active.

When the Num Lock indicator is not lit the cursor control functions are active in the Numeric keypad.



### Ctrl key

starts key combination actions. The **Ctrl** key is also called "Ctrl", "Control" or "Control key".



+



+



### Warm boot

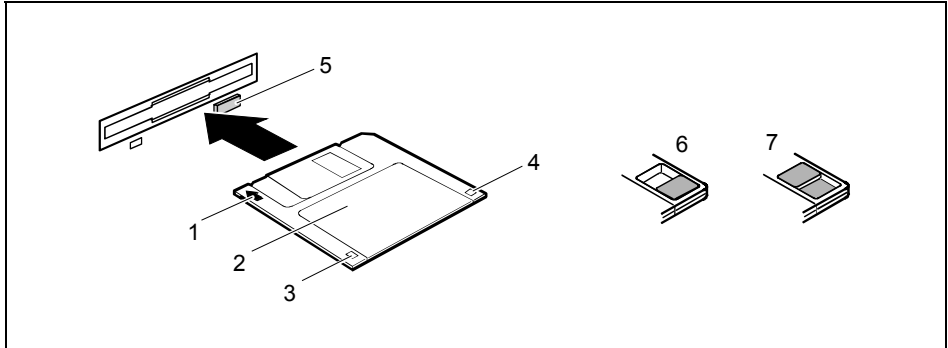
restarts the workstation. Press simultaneously the keys **Ctrl**, **Alt** + **Del**. Under some operating systems the Task Manager appears first. Then you must press all three keys again to re-boot.

## Working with floppy disks



Follow the instructions supplied by the vendor of the floppy disks.

Never clean the floppy disk drives with cleaning disks. Any attempt would destroy the read/write head in the disk drive within 20 seconds.



1 = Insertion direction

2 = Label area

3 = Write protection tab for a 1.44 Mbyte floppy disk

4 = Identification of a 1.44 MB floppy disk or write protect switch on a 120 MB floppy disk

5 = Eject button for inserted floppy disks

6 = Disk is write-protected

7 = Disk is not write-protected

### To insert a diskette

- Push the floppy disk into the drive in the insertion direction (1) until it engages. The label should be facing upward.

### To remove a diskette

- Push the eject button (5).

### Protect the floppy disk against being overwritten or erased

- Slide the write-protect slider into position (6). The hole is now visible.

### Deactivate write protection

- Slide the write-protect slider into position (7). The hole is now covered.

## Settings in BIOS Setup

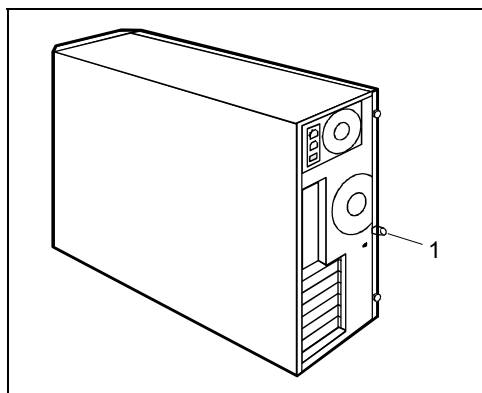
The *BIOS Setup* menu allows you to set your hardware configuration and system functions of the workstation. When the PC is delivered, the default entries are valid (see "BIOS Setup" manual and if necessary technical manual for the mainboard). You may customise these settings to your requirements in the *BIOS Setup*.

## Property and data protection

Software functions and mechanical locking offer a broad range of functions for protecting your workstation and your personal data from unauthorised access. You can also combine these functions.

### Anti-theft protection

You can also use this eye (1) to anchor the casing.



1 = Large eye

### Access authorisation via SmartCard

In systems equipped with a SmartCard reader, access can be restricted to those users who have a corresponding SmartCard.



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# Troubleshooting and tips



Take note of the safety notes in the "Safety" manual and in the "Preparing for use" chapter, when you connect or disconnect cables.

If a fault occurs, try to correct it as described in the following places:

- in this chapter
- in the documentation of the connected devices
- in the help systems of the software used
- in the documentation of your operating system

If you fail to correct the problem, proceed as follows:

- ▶ Switch off the workstation.
- ▶ Make a note of the steps and the circumstances that led to the fault.
- ▶ Make a note of any error messages displayed.
- ▶ Note the ID number of your device. This number can be found on the type rating plate on the back of the casing.
- ▶ Contact your sales outlet or our customer service centre.

## Installing new software

When installing programmes or drivers, important files may be overwritten and modified. To be able to access the original data in the event of any problems following installation, you should backup your hard disk prior to installation.

## Power-on indicator remains unlit after you have switched on your device

This may be due to the following:

### **The mains voltage supply is faulty**

- ▶ Check that the power cable is plugged properly into the workstation and grounded mains outlet.
- ▶ Switch on the workstation.

### **Internal power supply overloaded**

- ▶ Disconnect the power plug of the workstation from the grounded mains outlet.
- ▶ Wait for a moment.
- ▶ Plug the power plug into the grounded mains outlet again.
- ▶ Switch on the workstation.

# The screen stays blank

If your screen remains blank this may be due to the following:

### Monitor is switched off

- ▶ Switch your monitor on.

### Power saving has been activated (screen is blank)

- ▶ Press any key on the keyboard.

or

- ▶ Deactivate the screen saver. Enter the appropriate password.

### Brightness control is set to dark

- ▶ Adjust the brightness control. For detailed information, please refer to the operating manual supplied with your monitor.

### Power cable not connected

- ▶ Switch off the monitor and the workstation.
- ▶ Check whether the power cable of the monitor is properly connected to the monitor and to the mains outlet.
- ▶ Check that the power cable of the workstation is plugged properly into the workstation and grounded mains outlet.
- ▶ Switch on the monitor and the workstation.

### Monitor cable not connected

- ▶ Switch off the monitor and the workstation.
- ▶ Check that the monitor cable is properly connected to the workstation and monitor.
- ▶ Switch on the monitor and the workstation.

### Wrong monitor has been set under Windows 2000

- ▶ Restart the workstation.
- ▶ If the message *Starting Windows* appears, press function key **F8**

The *Windows 2000 Advanced Options Menu* appears.

- ▶ Select *Safe Mode* or *Safe Mode with Network*.
- ▶ Set the correct values for the attached monitor as described in the operating manual of the monitor by selecting *Start - Settings - Control Panel - Display - Settings*.



## Wrong monitor has been set under Window XP

- ▶ Restart the workstation.
- ▶ Press **F8** while the system is booting.

Either the *Windows Advanced Start Options* menu or the menu for selecting the operating system appears.


- ▶ If the menu for selecting the operating system appears, press **F8**.
- ▶ Select *Safe Mode* or *Safe Mode with Network*.
- ▶ Set the correct values for the attached monitor as described in the operating manual of the monitor by selecting *Start - Settings - Control Panel - Display* and then the *Appearance, Themes, Settings* tabs.

## The wrong RAM modules have been inserted

See the technical manual for the mainboard for information on which memory modules can be used.

## No mouse pointer displayed on the screen

- ▶ Shut down the operating system properly.
- ▶ Switch off the workstation.
- ▶ Check that the mouse cable is properly connected to the system unit.  
If you use an adapter or extension lead with the mouse cable, check the connections.
- ▶ Make sure that only one mouse is connected.
- ▶ Switch on the workstation.

The mouse controller must be enabled if you use a PS/2 mouse on the PS/2 mouse port .

- ▶ Check in the *BIOS Setup* that the mouse controller is *Enabled*.
- ▶ Check that the mouse driver is properly installed and is present when the application programme is started. Detailed information can be found in the user guide for the mouse and application programme.

## The floppy disk cannot be read or written

- ▶ Check that the write protection of the floppy disk or the floppy disk drive is activated (refer to the "BIOS Setup" manual and if necessary to the technical manual for the mainboard).
- ▶ Check the entry for *Diskette A:* in the *Main* menu of the *BIOS Setup*.
- ▶ Check that the floppy disk drive controller is enabled (also refer to the technical manual for the mainboard or to the "BIOS Setup" manual).
- ▶ Check that the cables of the floppy disk drive are properly connected (refer to "Changing the floppy disk drive" chapter).

# Time and/or date is not correct

You can set the time and date in the *BIOS Setup* or in the operating system.

- ▶ Set the time and date.



If the time and date are repeatedly wrong when you switch on your PC, the on-board battery is flat. Change the lithium battery as described in the "Extensions to the mainboard" - "Replacing lithium battery" chapter.

# Error messages on the screen

Error messages and their explanation are contained:

- in the technical manual for the mainboard
- in the "BIOS Setup" manual
- in the documentation for the programmes used

# Restoring the hard disk contents

Should you need to restore your hard disk, the instructions are provided on the case of the "Recovery CD" (delivered with your system).

# Tips

## The workstation cannot be switched off with the ON/OFF switch

Cause: The workstation has not been switched on with the ON/OFF switch.

- ▶ Press the ON/OFF switch again.

Cause: System crash

- ▶ Press and hold the power button for at least four seconds until the workstation switches off.

## Out of system resources

If you have too many applications running at once, you may experience problems due to a lack of system resources. In this case you should:

- ▶ close unnecessary applications

or

- ▶ run the applications in a different order

## Other manuals

Other manuals are contained on the "User Documentation" or "Drivers & Utilities" CD.

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# System expansions



As the PC has to be shut down in order to install/deinstall system hardware components, it is a good idea to print out the relevant sections of this chapter.

It may be necessary to update the BIOS when carrying out a system expansion or hardware upgrade. Additional information is contained in the "BIOS Setup" manual or possibly in the technical manual for the mainboard.

When installing components that become very hot, make sure that the maximum permissible temperatures of the individual components are not exceeded.

The workstation must be switched off when installing/removing the system expansions and may not be in the energy-saving mode.

Remove the power plug before opening the workstation.

This chapter describes all the activities required to modify your workstation hardware (e.g. installing boards or drives).

Read the supplied documentation before installing new drives and/or boards.

Refer to the technical manual for the mainboard before making any extensions to the mainboard.

## Information about boards

Take care with the locking mechanisms (catches and centring pins) when you are replacing boards or components on boards.

To prevent damage to the board or the components and conductors on it, please take care when you insert or remove boards. Make sure expansion boards are inserted straightly.

Never use sharp objects (screwdrivers) for leverage.



Boards with electrostatic sensitive devices (ESD) are identifiable by the label shown.

When you handle boards fitted with ESDs, you must, under all circumstances, observe the following points:

- You must statically discharge yourself before working with boards (e.g. by touching a grounded object).
- The equipment and tools you use must be free of static charges.
- Pull out the power plug before inserting or removing boards.
- Always hold boards with ESDs by their edges.
- Never touch pins or conductors on boards fitted with ESDs.

# Opening the casing

- ▶ Switch off the workstation. The workstation must not be in the energy-saving mode.

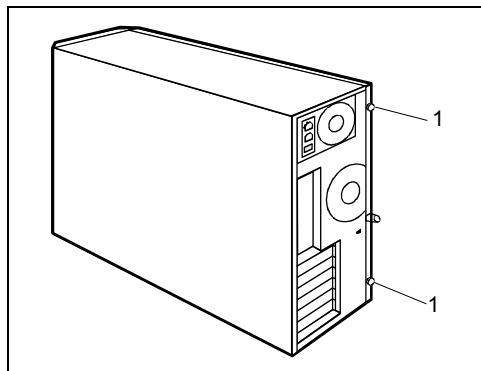


Please take note of the safety information in the "Important notes" chapter.

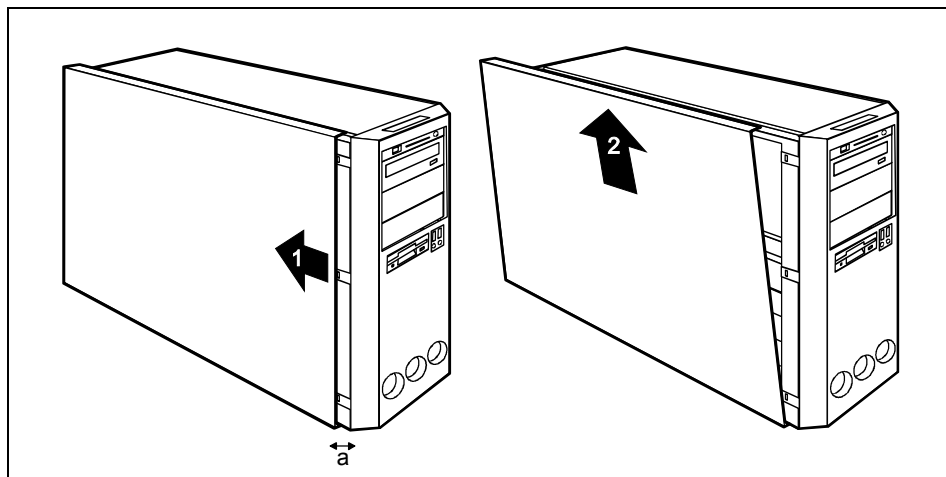
Pull the power plug out of the mains outlet.

Only insert the power plug after you have closed the casing.

- ▶ Remove any connected cables in the unit that obstruct you.
- ▶ Place the device in a convenient working position.

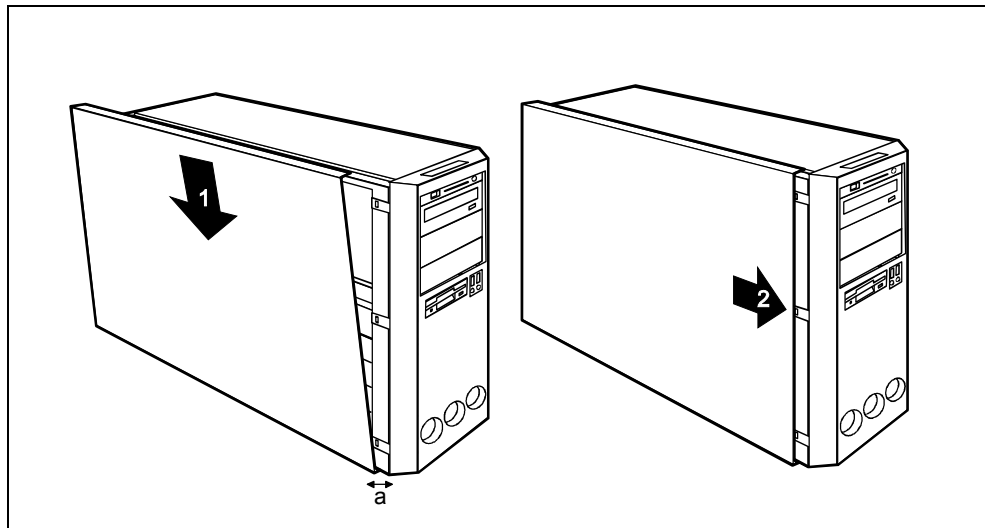


- ▶ Unscrew the two knurled screws (1) on the back of the casing.

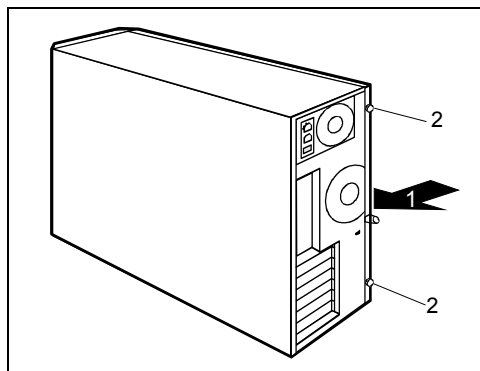


- ▶ Slide the side cover approximately 2 cm (a) in the direction of the arrow (1), until the stop.
- ▶ Unhook the upper edge of the side cover from the casing.
- ▶ Pull the side cover in the direction of the arrow of the casing.

## Closing the casing



- ▶ Hook the side cover into the lower guide trail in the casing (1). Make sure that the side cover is offset by approximately 2 cm (a).
- ▶ Engage the top edge of the side cover on the casing.
- ▶ Push the side cover as far as it will go in the direction of the arrow (2).



- ▶ Press the side cover onto the casing (1) at the rear and tighten the two knurled screws (2) with the other hand.

# Installing and removing a board



Please take note of the section "Information about boards".

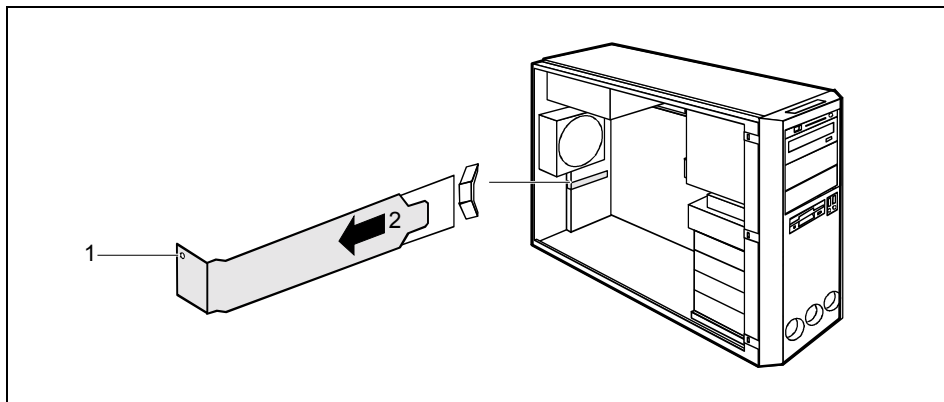
The number, position and arrangement of the board slots on the mainboard can be found in the technical manual for the mainboard. Boards may already be installed when the device is shipped.

You can fix boards in two ways:

- with screws
- with the clip

## Installing board with screw

- ▶ Open the casing (see "Opening the casing" chapter).

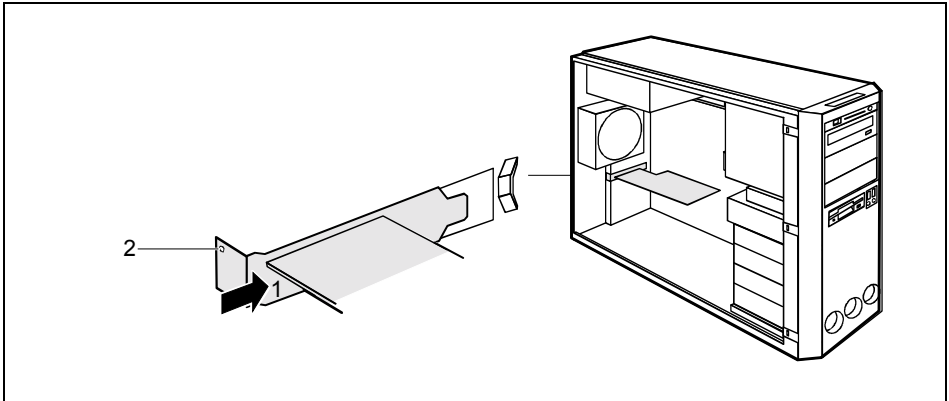


- ▶ Loosen the screw (1).
- ▶ Remove the rear slot cover plate from the slot (2).



Do not dispose of the cover plate. For cooling, protection against fire and in order to comply with EMC regulations, you must refit the cover plate if you remove the board.

- ▶ Make the required settings for the board.



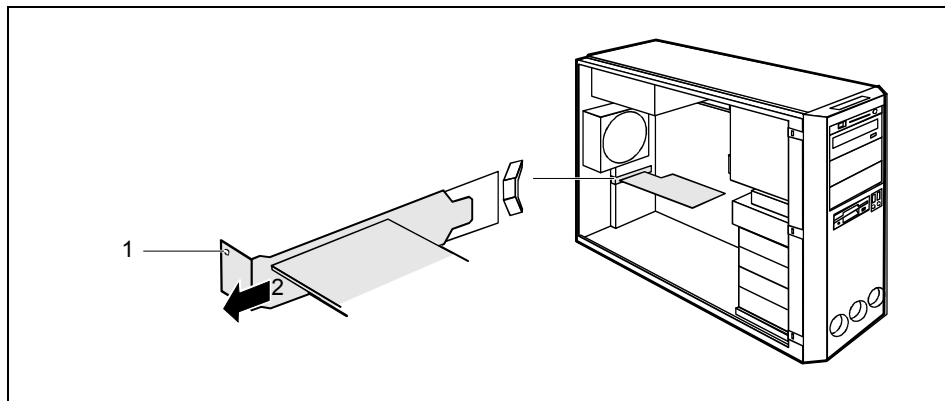
- ▶ Push the board up to its slot (1) as far as the stop.
- ▶ Press the board into the slot so that it engages.
- ▶ Fasten the board into place with the screw (2).
- ▶ If necessary, connect the cables.
- ▶ Close the casing (see "Closing the casing" chapter).



If you have installed or removed a PCI board, please check the relevant PCI slot settings in the *BIOS Setup*. If necessary, change the settings. Further information is provided in the PCI board documentation.

### Removing board with screw

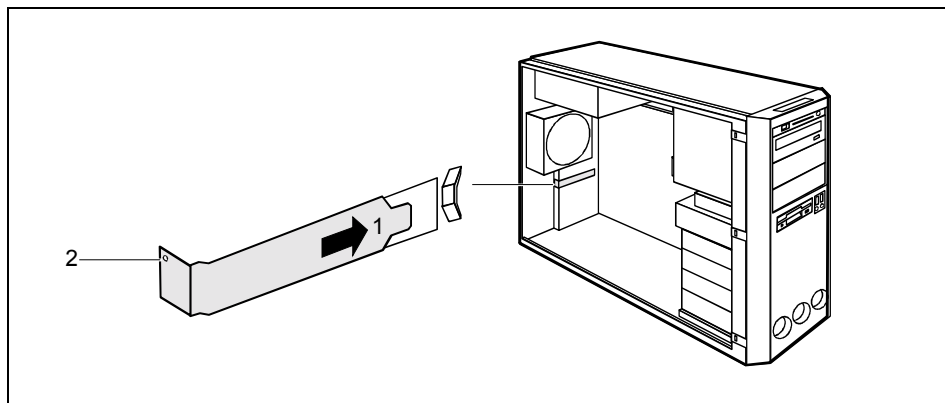
- ▶ Open the casing (see "Opening the casing" chapter).
- ▶ Disconnect the cables connected to the board.



- ▶ Loosen the screw (1).
- ▶ Remove the board from the casing (2).



For cooling, protection against fire, and in order to comply with EMC (electromagnetic compatibility) regulations, you must refit the cover plate.



- ▶ Push the rear slot cover plate into the slot (1). Ensure that the point of the cover engages on the outside of the casing.
- ▶ Fasten the rear slot cover plate with the screw (2).



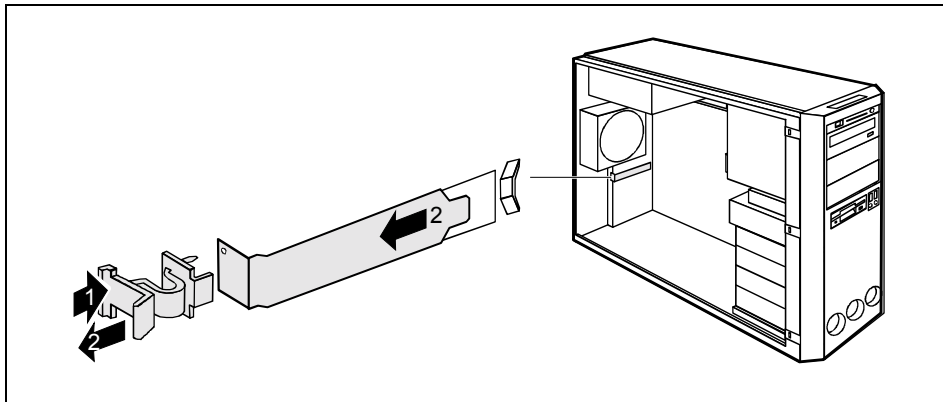
- Close the casing (see "Closing the casing" chapter).



If you have installed or removed a PCI board, please check the relevant PCI slot settings in the *BIOS Setup*. If necessary, change the settings. Further information is provided in the PCI board documentation.

## Installing board with clip

- Open the casing (see "Opening the casing" chapter).

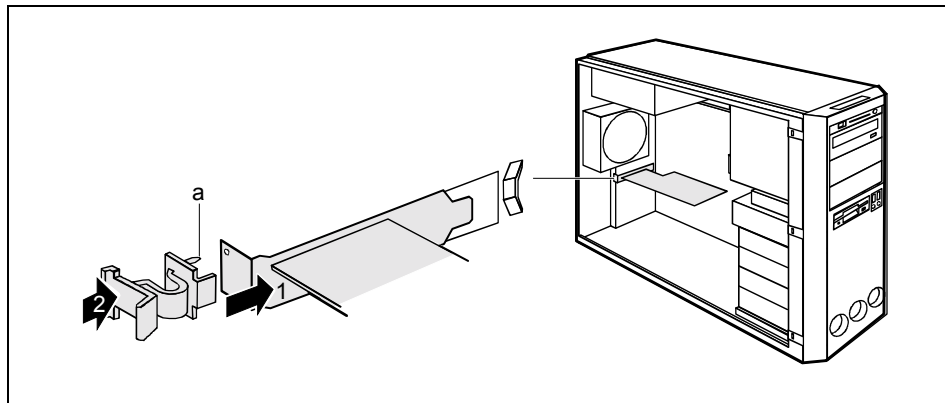


- Press on the clip (1) in the direction of the arrow and unhook it.
- Pull off the clip (2).
- Remove the rear slot cover plate from the slot (2).



Do not dispose of the cover plate. For cooling, protection against fire and in order to comply with EMC regulations, you must refit the cover plate if you remove the board.

- Make the required settings for the board.



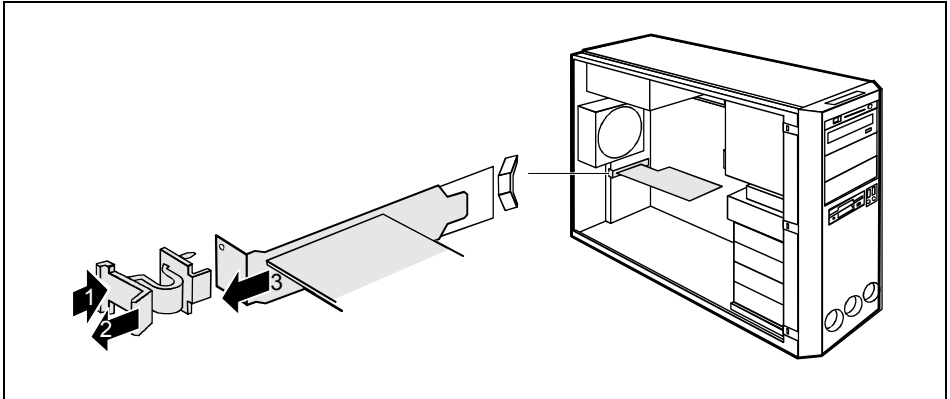
- ▶ Push the board up to its slot (1) as far as the stop.
- ▶ Press the board into the slot so that it engages.
- ▶ Put the clip on. Make sure that the pin (a) is inserted into the screw hole.
- ▶ Press the clip in the direction of the arrow (2). Make sure that the clip engages when released.
- ▶ If necessary, connect the cables.
- ▶ Close the casing (see "Closing the casing" chapter).



If you have installed or removed a PCI board, please check the relevant PCI slot settings in the *BIOS Setup*. If necessary, change the settings. Further information is provided in the PCI board documentation.

## Removing board with clips

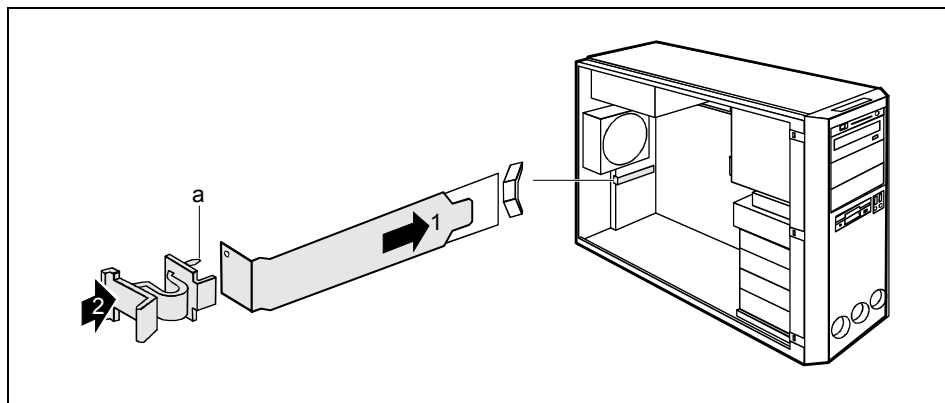
- ▶ Open the casing (see "Opening the casing" chapter).
- ▶ Disconnect the cables connected to the board.



- ▶ Press the clip in the direction of the arrow (1) and unhook it.
- ▶ Pull off the clip (2).
- ▶ Remove the board from the casing (3).



For cooling, protection against fire, and in order to comply with EMC (electromagnetic compatibility) regulations, you must refit the cover plate.



- ▶ Push the rear slot cover plate into the slot (1). Ensure that the point of the cover engages on the outside of the casing.
- ▶ Put the clip on. Make sure that the pin (a) is inserted into the screw hole.
- ▶ Press the clip in the direction of the arrow (2). Make sure that the clip engages when released.
- ▶ Close the casing (see "Closing the casing" chapter).



If you have installed or removed a PCI board, please check the relevant PCI slot settings in the *BIOS Setup*. If necessary, change the settings. Further information is provided in the PCI board documentation.

## Installing and removing drives

The PC casing can accommodate a total of eight drives:

- four accessible drives  
(three 5¼" drives and one 3½" drive)
- four non-accessible drives  
(3½" drives)

"Accessible drives" are e.g. DVD or CD ROM drives, into which a data carrier can be inserted from outside. Non-accessible drives are e.g. hard disk drives.

### IDE drives

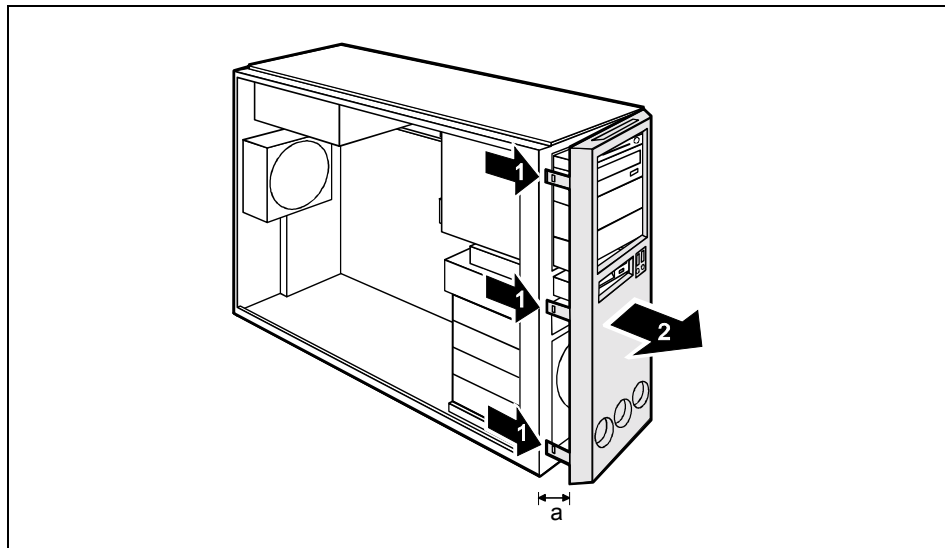
Four IDE drives are supported as standard equipment. Ideally, hard disks are connected to IDE interface 1 and other drives to IDE interface 2 (see also the technical manual for the mainboard).

### SCSI drives

If you want to install a SCSI drive, you require a SCSI controller and a SCSI cable. Details are provided in the manuals on the SCSI controller.

## Removing the front panel

- Open the casing (see "Opening the casing" chapter).



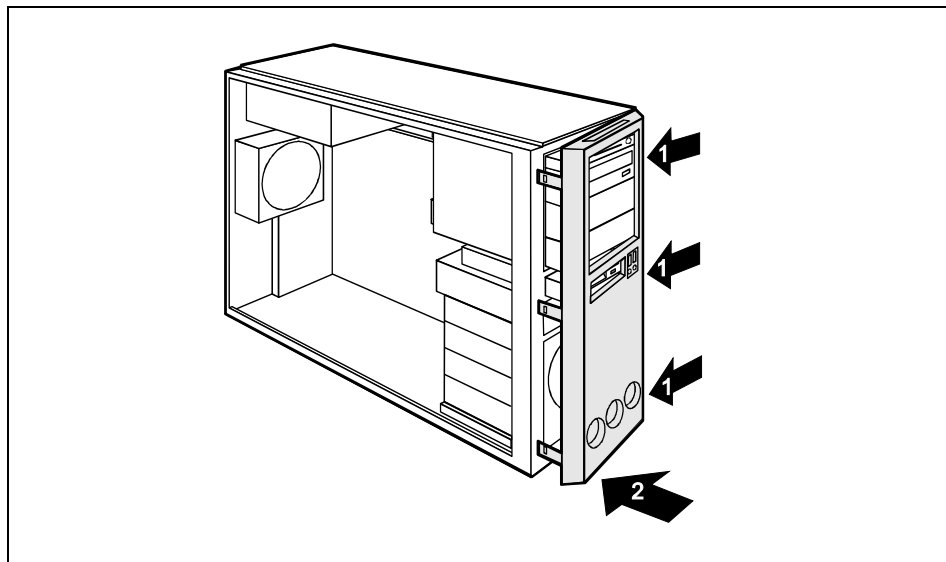
- Detach the three locking tabs on the left side of the front panel (1).
- Open the left side of the front panel approximately 2-3 cm (a).

- Pull the front panel off in the direction of the arrow. If you pull too firmly, the LCD cable may be pulled off the Celsius V or damaged.



In a system with an LCD, the cable is long enough so that you can carefully place it to one side with the front panel. You do not need to unplug the cable before removing the front panel.

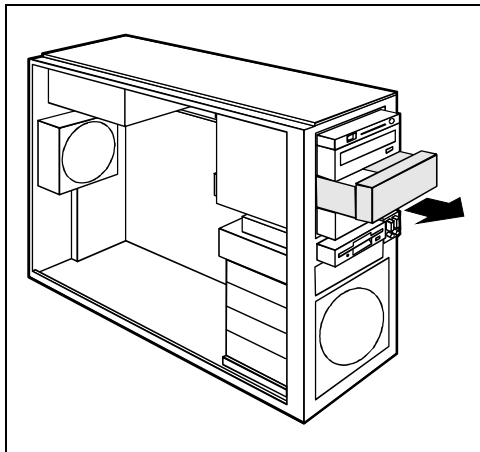
## Attaching the front panel



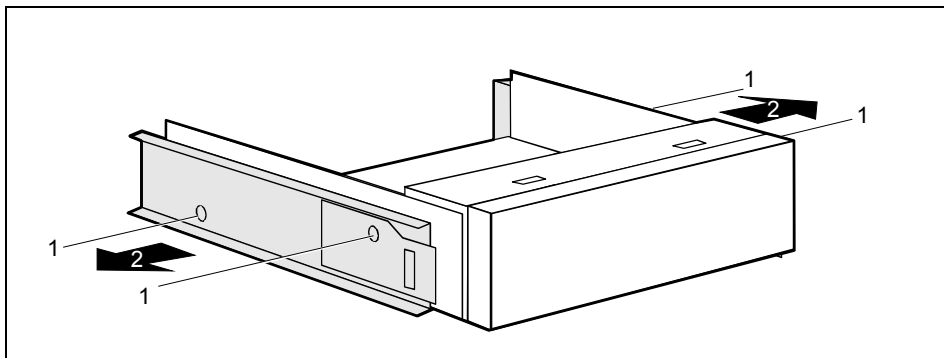
- Engage the three hinges on the right side of the front panel (1).
- Close the front panel on the casing so that the three locking tabs on the left side of the front panel engage (2). On the CelsiusV you must make sure that the LCD cable is not pinched.
- Close the casing (see "Closing the casing" chapter).

## Installing an accessible drive

- ▶ Open the casing (see "Opening the casing" chapter).
- ▶ Remove the front (see "Removing the front panel" chapter).



- ▶ Pull the empty slide-in module out of the casing.

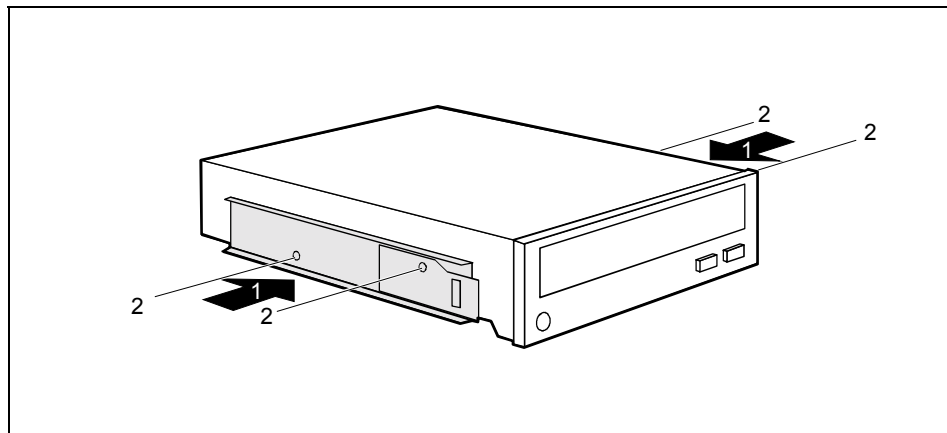


- ▶ Loosen the screws (1).
- ▶ Remove the rails from the cover (2).

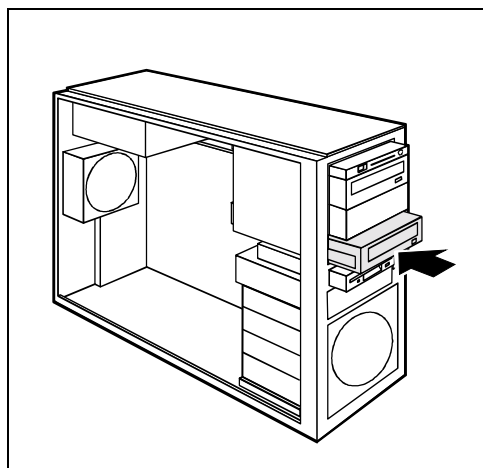


Do not throw away the cover of the empty slide-in module. For cooling, protection against fire, and in order to comply with EMC regulations, you must refit the empty slide-in module if you remove the drive again later.

- ▶ Take the new drive out of its packaging.
- ▶ Adjust the required settings on the drive (if necessary, on already-installed drives as well).



- ▶ Lay the rails onto the drive such that the holes in them align with the screw holes (1).
- ▶ Fasten the rails with the screws (2).



- ▶ Slide the accessible drive into the casing.

- ▶ Plug the data and the power supply connectors into the drive. Make sure the polarity is correct.
- ▶ Attach the front panel (see "Attaching the front panel" chapter).
- ▶ Close the casing (see "Closing the casing" chapter).

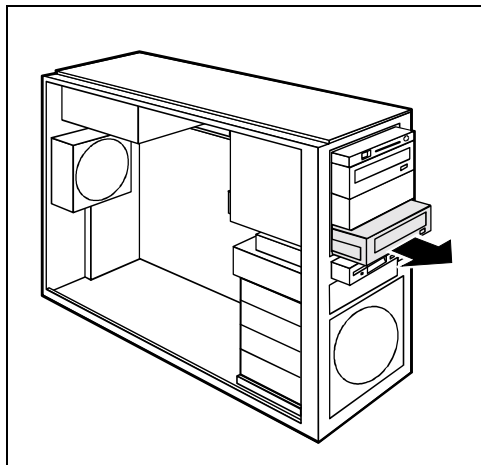


It may be necessary to modify the entry for the drive in the *BIOS Setup*.



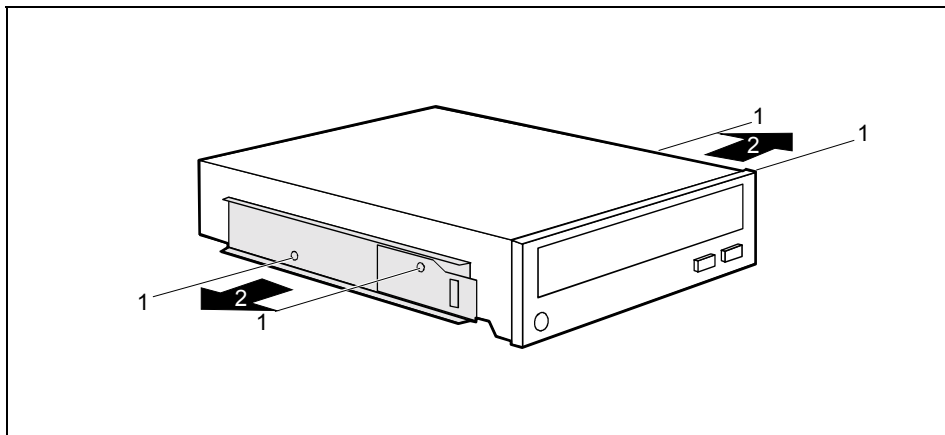
## Removing an accessible drive

- ▶ Open the casing (see "Opening the casing" chapter).
- ▶ Remove the front panel (see "Removing the front panel" chapter).
- ▶ Pull the data and the power supply connectors from the desired drive.

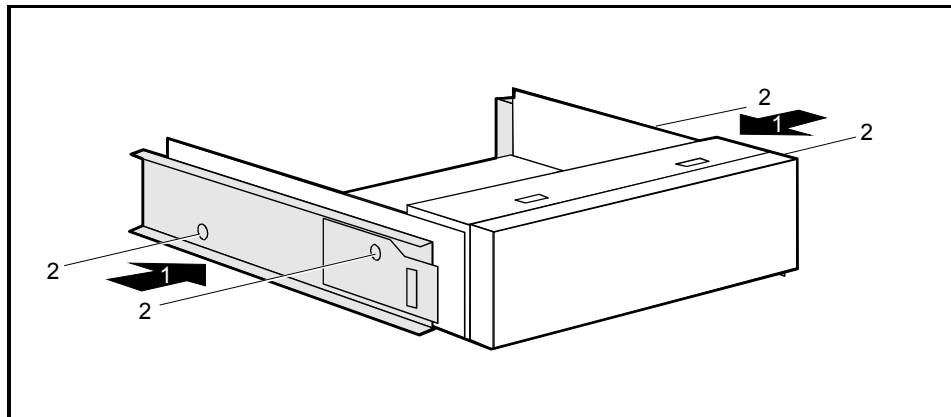


- ▶ Pull the drive out of the casing.

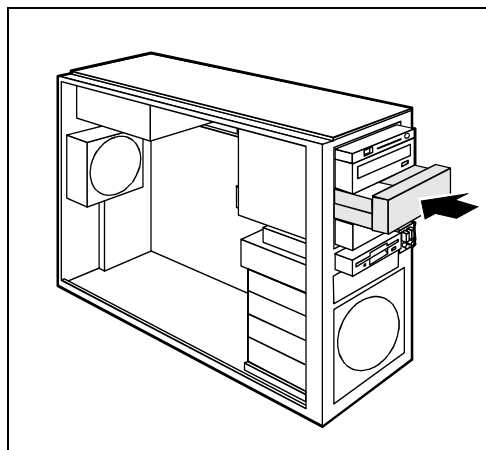
- ▶ If necessary, make the required settings on the remaining hard disk drive.



- ▶ Loosen the screws (1).
- ▶ Remove the rails from the drive (2).



- Lay the rails onto the blanking plate such that the holes in them align with the screw holes (1).
- Fasten the rails with the screws (2).



- Slide the empty slide-in module into the casing.

- Attach the front panel (see "Attaching the front panel" chapter).
- Close the casing (see "Closing the casing" chapter).

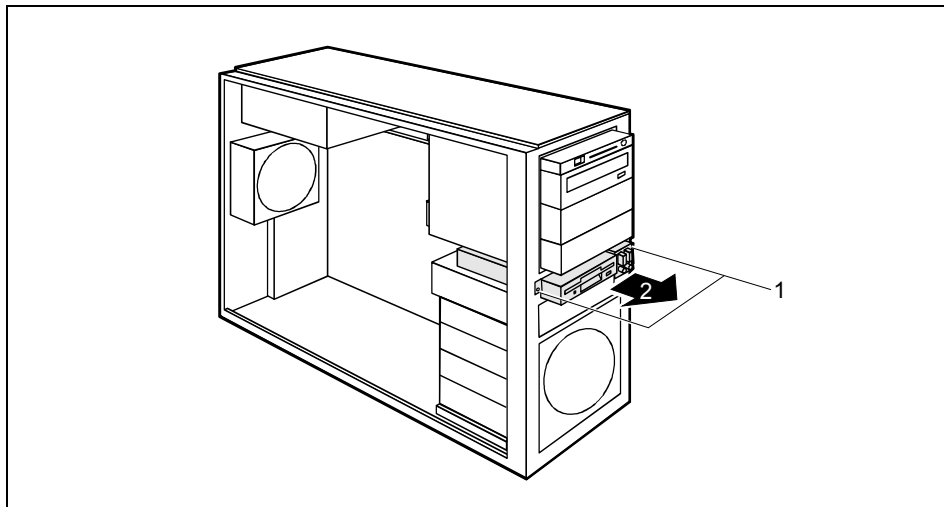


It may be necessary to modify the entry for the remaining drives in the *BIOS Setup*.

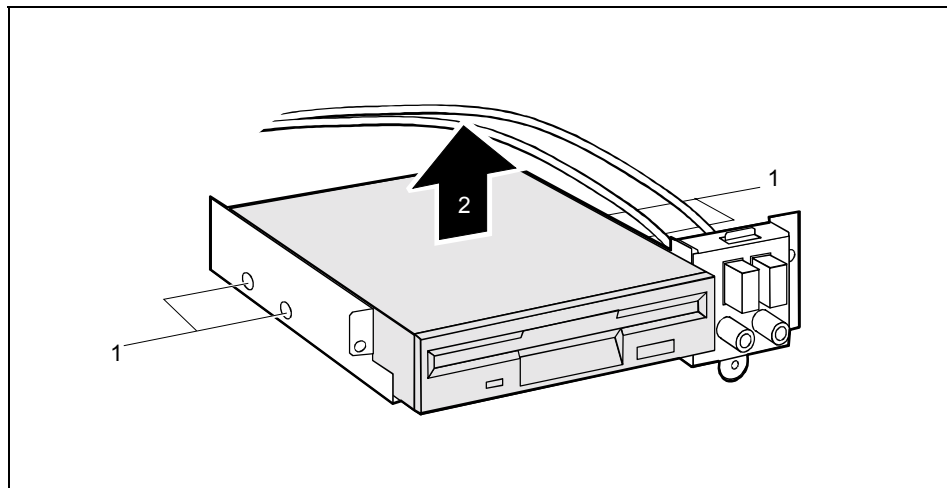
## Changing the floppy disk drive

- ▶ Open the casing (see "Opening the casing" chapter).
- ▶ Remove the front (see "Removing the front panel" chapter).
- ▶ Disconnect the cables connected to the floppy disk drive.
- ▶ If it is present, pull the cable of the front USB or USB-audio interface from the mainboard (see also the technical manual for the mainboard).

### Removing the floppy disk drive



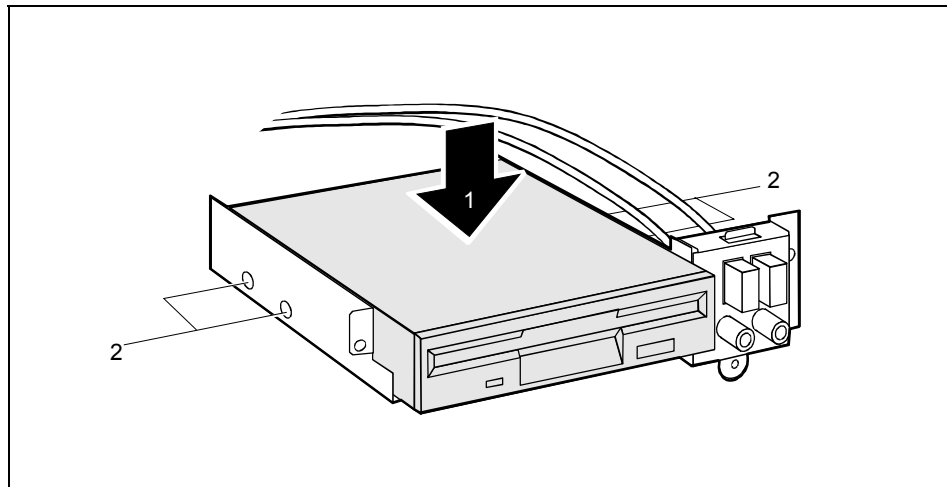
- ▶ Loosen the screws (1).
- ▶ Pull the slide-in module out of the casing (2).



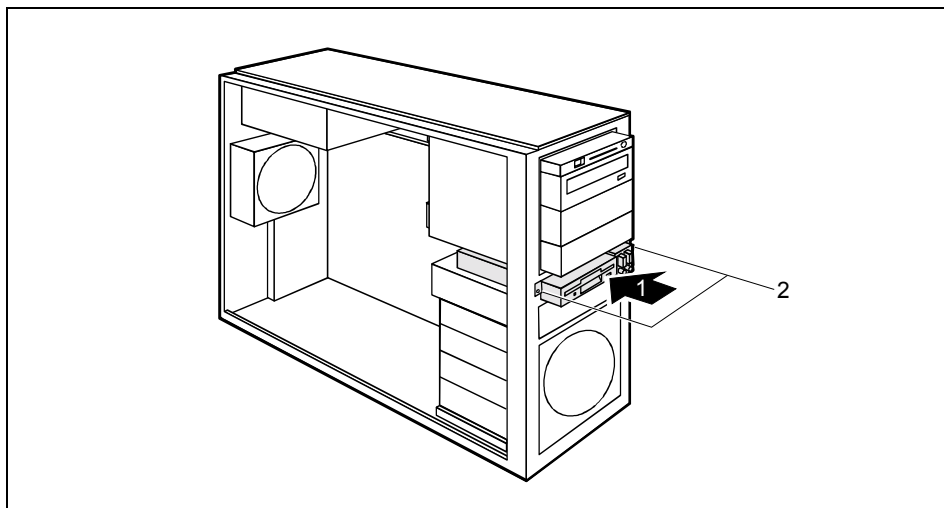
- ▶ Remove the screws (1) on both sides of the drive.
- ▶ Pull the disk drive out of the slide-in module (2).

### Installing the floppy disk drive

- ▶ Take the new floppy disk drive out of its packaging.



- ▶ If necessary, feed the cables for the USB or USB audio ports through the slide-in module slot into the inside of the unit.
- ▶ Slide the floppy disk drive into the slide-in module (1).
- ▶ Fasten the floppy disk drive with the screws (2) on both sides of the drive.



- ▶ Slide the slide-in module into the casing (1).
- ▶ Secure the slide-in module with the screws (2).
- ▶ Fit the data and power supply connectors to the floppy disk drive.
- ▶ If it is present, pull the cable of the front USB or USB-audio interface from the mainboard (see also the technical manual for the mainboard).
- ▶ Attach the front panel (see "Attaching the front panel" chapter).
- ▶ Close the casing (see "Closing the casing" chapter).



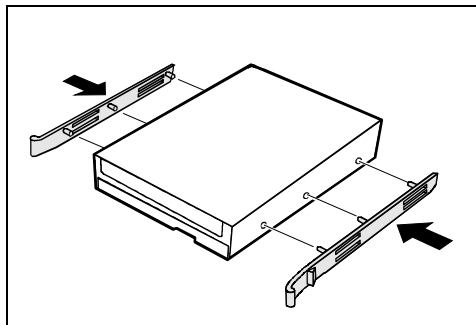
It may be necessary to modify the entry for the drive in the *BIOS Setup*.

## Installing or removing the hard disk drive

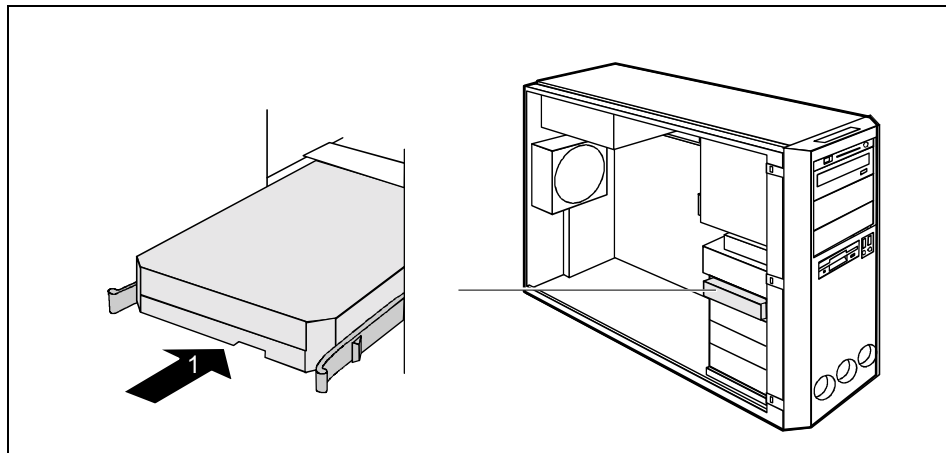
- ▶ Open the casing (see "Opening the casing" chapter).
- ▶ Remove the front (see "Removing the front panel" chapter).

### Installing a hard disk drive

- ▶ Take the new hard disk drive out of its packaging.
- ▶ Make the required settings (e.g. master-slave settings) on the drive.



- ▶ Secure the EasyChange rails on the side of the hard disk by inserting the upper pins of the EasyChange rail in the corresponding holes of the hard disk.



- ▶ Push the hard disk drive into the casing (1) until the EasyChange rails engage.
- ▶ Connect the data and power supply cables to the hard disk drive or to the hard disk drives.



Connect the blue plug of the data cable to the connection on the mainboard. Connect the plug on the other end to the hard disk drive.

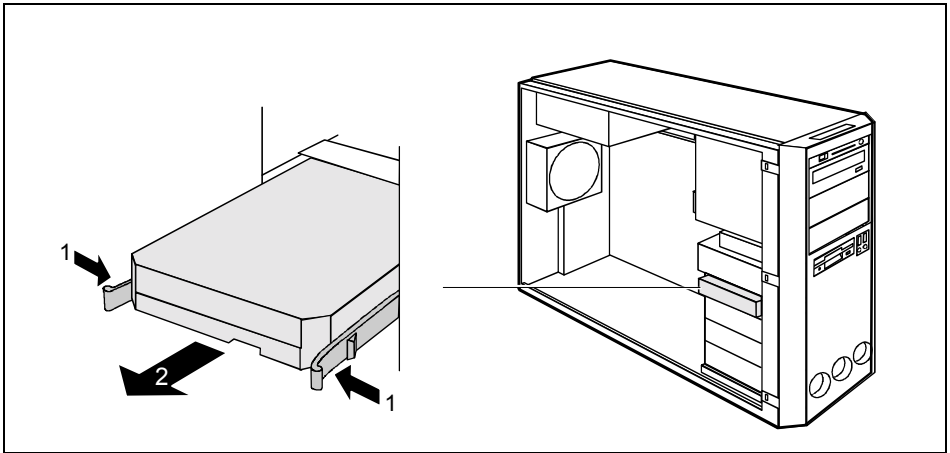
- ▶ Attach the front panel (see "Attaching the front panel" chapter).
- ▶ Close the casing (see "Closing the casing" chapter).



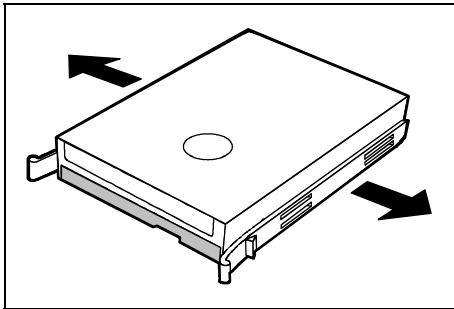
It may be necessary to modify the entry for the drive in the *BIOS Setup*.

## Removing a hard disk drive

- ▶ Disconnect all cables connected to the drive (data cable, power supply cable).



- ▶ Press the EasyChange rails in the direction of the arrows (1).
- ▶ Pull the hard disk drive out of the carrier (2).



- ▶ Pull the EasyChange rails off the hard disk drive.
- ▶ If necessary, make the required settings on the remaining hard disk drive.

- ▶ Attach the front panel (see "Attaching the front panel" chapter).
- ▶ Close the casing (see "Closing the casing" chapter).



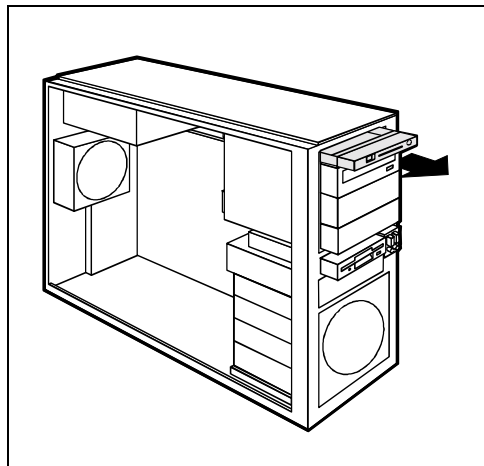
It may be necessary to modify the entry for the drive in the *BIOS Setup*.

# Installing and removing SmartCard reader

In systems equipped with a SmartCard reader, access can be restricted to those users who have a corresponding SmartCard.

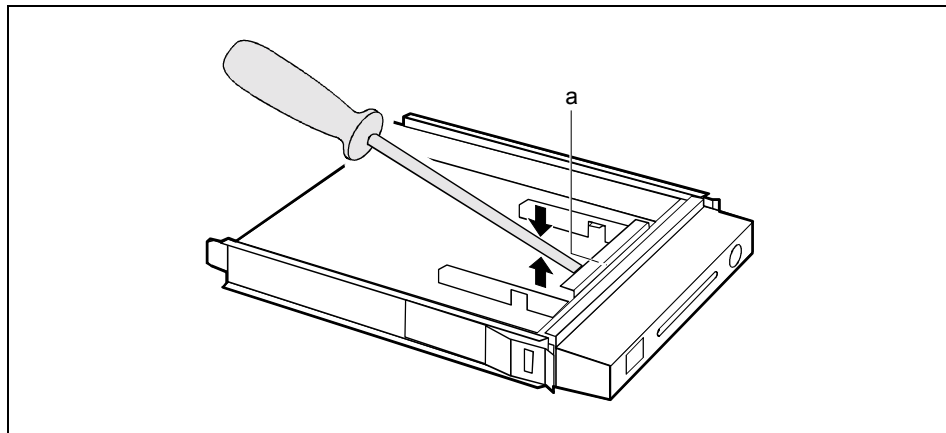
### Installing a SmartCard reader for the first time

- Open the casing (see "Opening the casing" chapter).
- Remove the front (see "Removing the front panel" chapter).



- Pull the empty slide-in module out of the casing.

On the inside of the slide-in module, the slot for the SmartCard is protected with a plastic bar on delivery.

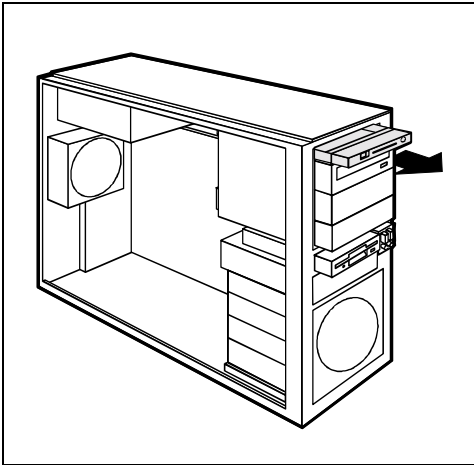


- Break off the plastic (a) tag.

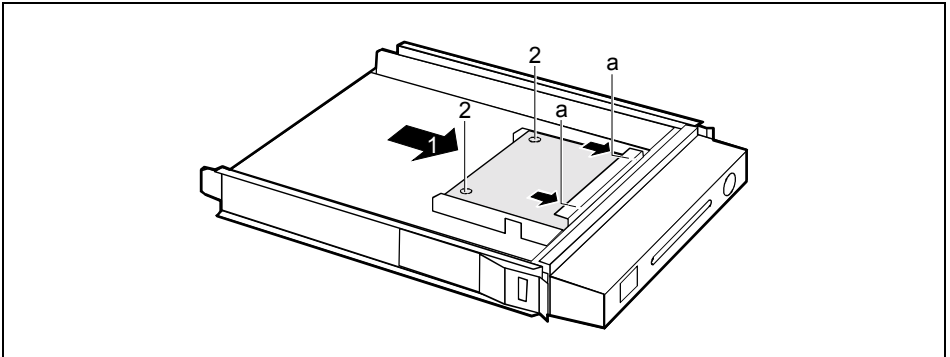


**Installing a SmartCard reader**

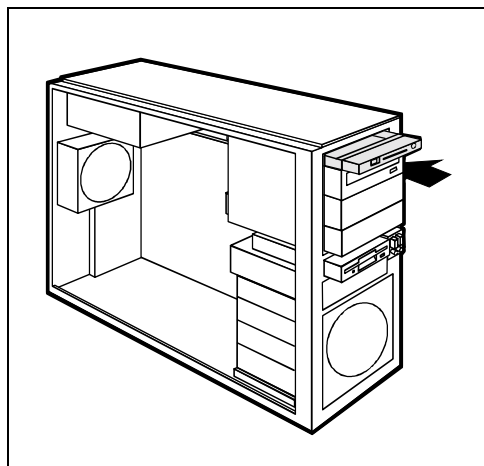
- ▶ Open the casing (see "Opening the casing" chapter).
- ▶ Remove the front (see "Removing the front panel" chapter).



- ▶ Pull the slide-in module out of the casing.



- ▶ Push the SmartCard reader - with the component side facing downwards - in the direction of the arrow (1) into the guide (a).
- ▶ Screw the SmartCard reader to the carrier (2).

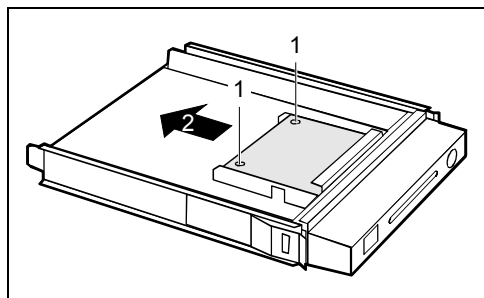


- Push the SmartCard reader as far as possible into the casing in the direction of the arrow.

- Attach the SmartCard reader cable to the mainboard connector (see the technical manual for the mainboard).
- Attach the front panel (see "Attaching the front panel" chapter).
- Close the casing (see "Closing the casing" chapter).

### Removing a SmartCard reader

- Open the casing (see "Opening the casing" chapter).
- Remove the front (see "Removing the front panel" chapter).
- Disconnect the plug of the SmartCard data cable from the mainboard (see the technical manual for the mainboard).
- Pull the SmartCard reader out of the casing in the direction of the arrow (1) (see "Installing a SmartCard reader" chapter).



- Loosen the screws (1).
- Pull the SmartCard reader out of the carrier in the direction of the arrow (2).

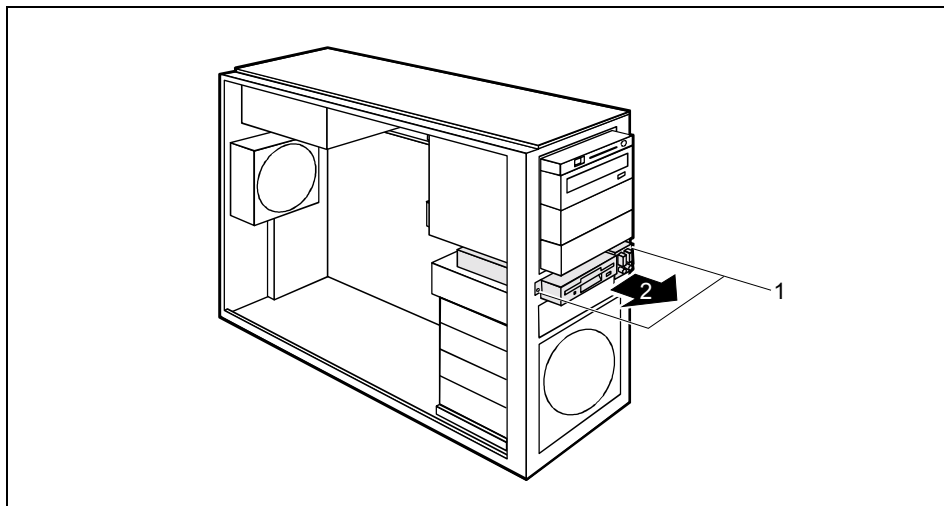
- If you do not want to install a new SmartCard reader, push the slide-in module into the casing again (see "Installing a SmartCard reader" chapter).
- Attach the front panel (see "Attaching the front panel" chapter).
- Close the casing (see "Closing the casing" chapter).

## Installing and removing front USB or USB audio ports

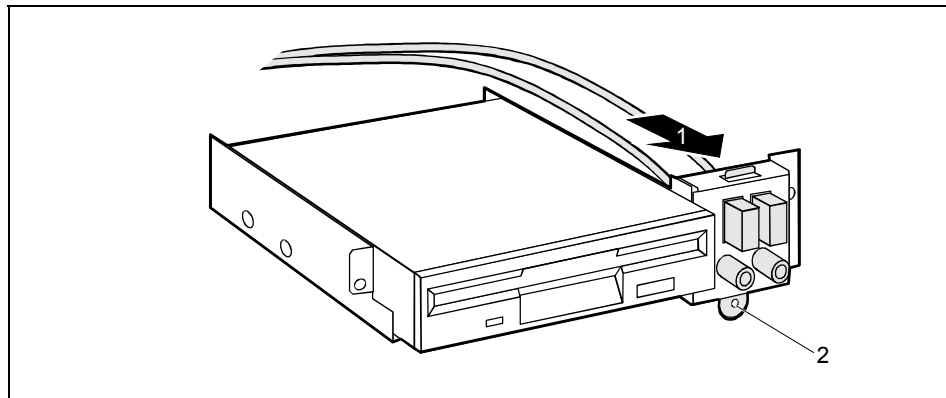
In the gap beside the floppy disk drive, two USB ports or one USB port combined with two audio ports can be installed (headphone out, microphone in).

### Installing front USB or USB audio ports

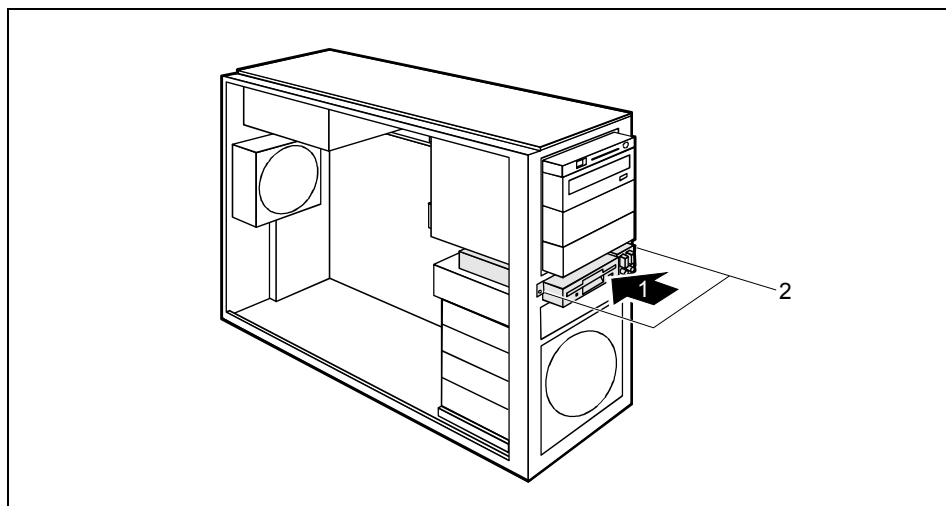
- ▶ Open the casing (see "Opening the casing" chapter).
- ▶ Remove the front (see "Removing the front panel" chapter).
- ▶ Pull the cables from the floppy disk drive.



- ▶ Loosen the screws (1).
- ▶ Pull the slide-in module out of the casing (2).



- ▶ First engage the tab (1).
- ▶ Fasten the USB or USB audio ports with the screw (2).
- ▶ Feed the cables for the USB or USB audio ports through the slide-in module slot into the inside of the unit.



- ▶ Slide the floppy disk drive into the slide-in module (1).
- ▶ Fasten the floppy disk drive with the screws (2) on both sides of the drive.
- ▶ Fit the data and power supply connectors to the floppy disk drive.
- ▶ Connect the USB cable and, if necessary, the audio cable to the corresponding connector on the mainboard (see also the technical manual for the mainboard).
- ▶ Remove the blanking plate for the USB or USB audio ports from the front panel.

- ▶ Insert the appropriate ports frame for the USB or USB audio ports into the front panel.

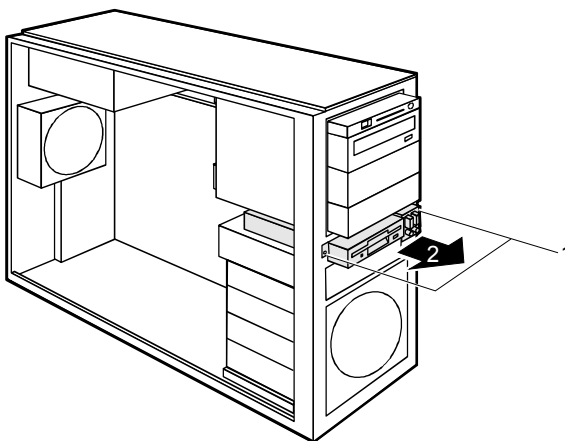


The USB interface and the USB-audio interface each have a separate interface frame.

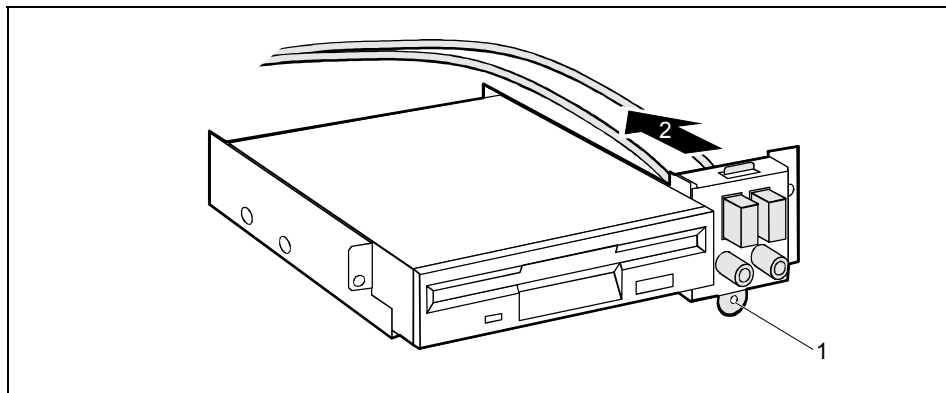
- ▶ Attach the front panel (see "Attaching the front panel" chapter).
- ▶ Close the casing (see "Closing the casing" chapter).

#### Removing front USB or USB audio ports

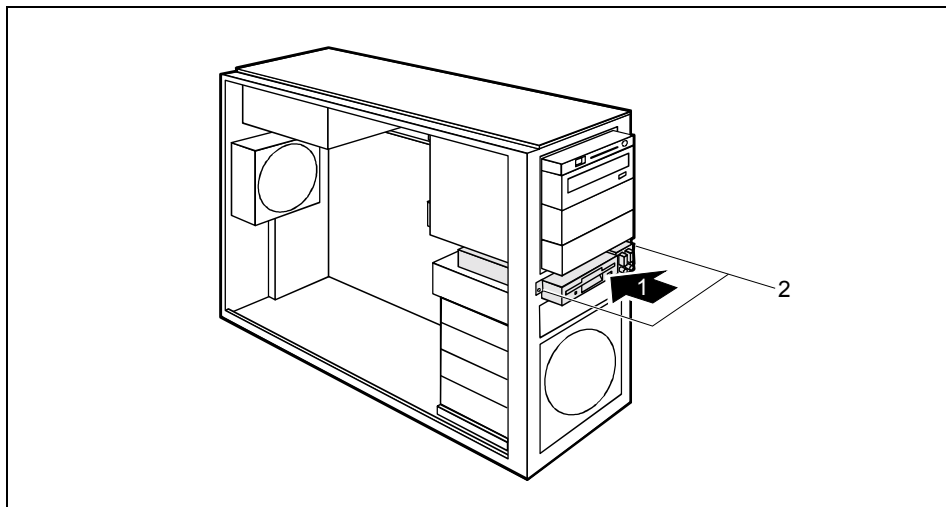
- ▶ Open the casing (see "Opening the casing" chapter).
- ▶ Remove the front (see "Removing the front panel" chapter).
- ▶ Detach the USB data cable and, if present, the audio data cable from the mainboard (see the technical manual for the mainboard).
- ▶ Pull the cables from the floppy disk drive.



- ▶ Loosen the screws (1).
- ▶ Pull the slide-in module out of the casing (2).



- ▶ Remove the screw (1) and then remove the USB or USB-audio interface (2).



- ▶ Slide the floppy disk drive into the slide-in module (1).
- ▶ Fasten the floppy disk drive with the screws (2) on both sides of the drive.
- ▶ Fit the data and power supply connectors to the floppy disk drive.
- ▶ Remove the ports frame for the USB or USB audio ports from the front panel.
- ▶ Insert the blanking plate for the USB or USB audio ports into the front panel.
- ▶ Attach the front panel (see "Attaching the front panel" chapter).
- ▶ Close the casing (see "Closing the casing" chapter).

## Extensions to the mainboard

Details on whether you can upgrade the main memory or the processor are provided in the technical manual for the mainboard.

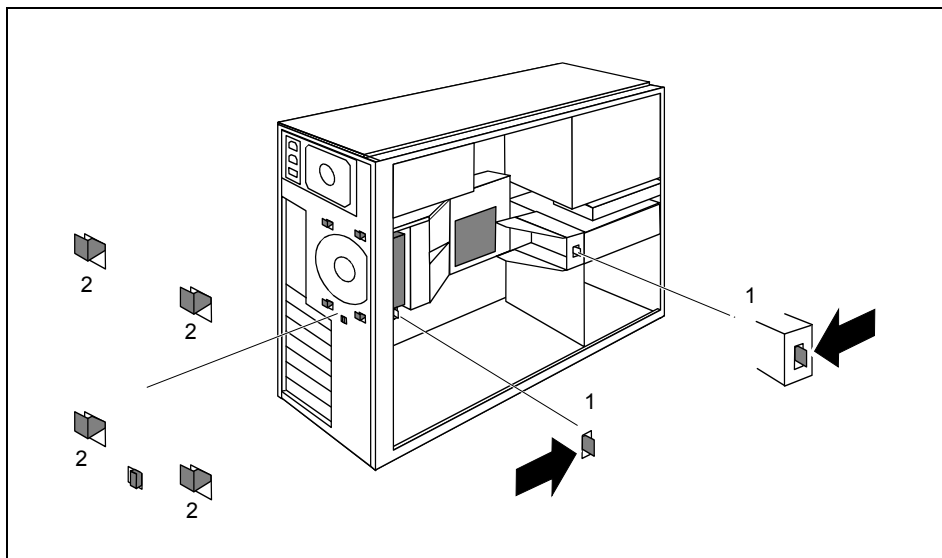
- Open the casing (see "Opening the casing" chapter).

### Removing ventilation duct

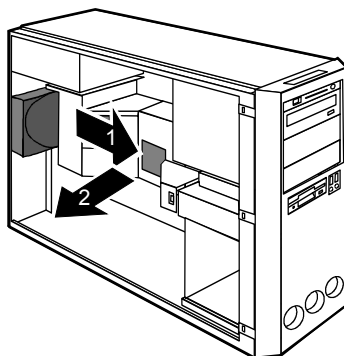
Before you can upgrade the main memory or the processor, or before you can replace the processor or the lithium battery, you must remove the ventilation duct.



The ventilation duct is permanently connected to the fan.



- Press the locking lugs (1) in the direction of the arrow and unhook them.  
The hooks (2) on the back of the casing release.
- Carefully unhook the hooks (2).



- ▶ Pull the ventilation duct and the fan a few millimetres in the direction of the arrow (1) to pull the hooks at the back of the casing out of the casing.
- ▶ Remove the ventilation duct and the fan from the casing in the direction of the arrow (2).



When lifting out the ventilation duct, the fan cable detaches itself from the mainboard.

When removing the ventilation duct, be careful not to damage the processor cooler(s) on the mainboard.

## Installing ventilation duct

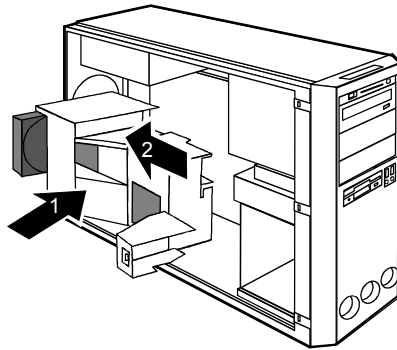
- ▶ Pull the fan cable off the fan before the ventilation duct is installed in the device installing the ventilation duct in the device.
- ▶ Connect the fan cable to the corresponding connector on the mainboard (also see the technical manual for the mainboard).



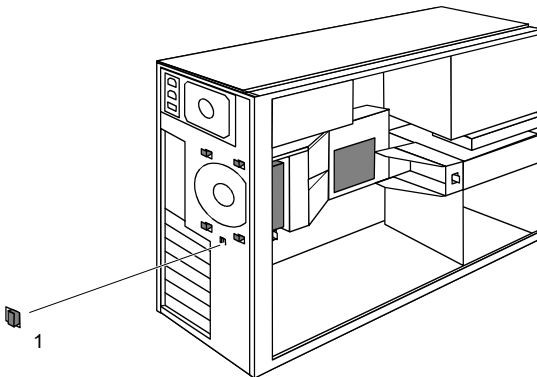
When laying the fan cable, make sure that it is not kinked or pinched.

When fitting the ventilation duct, be careful not to damage the processor cooler(s) on the mainboard.



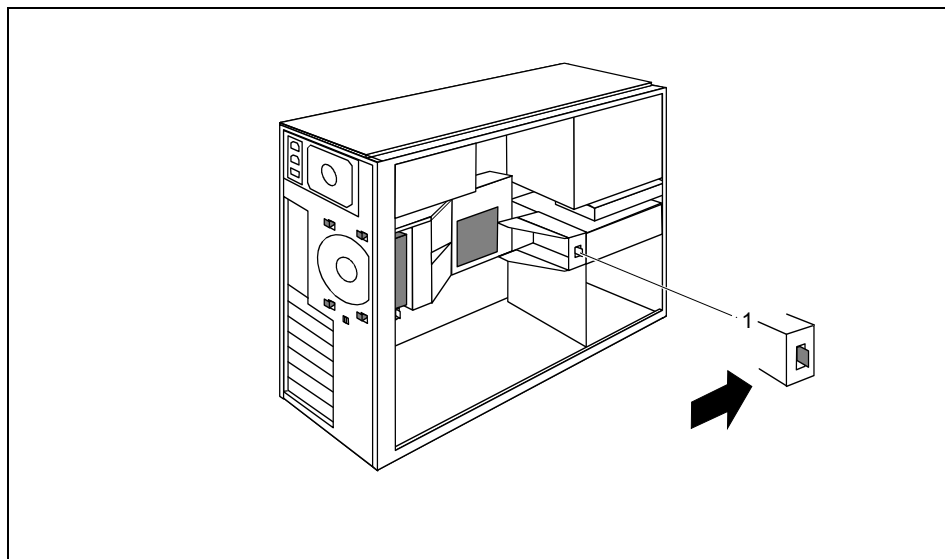


- Place the ventilation duct and the fan in the casing at a slight angle in the direction of the arrow (1). When doing so, the hooks of the ventilation duct must hook into the openings provided in the back of the casing.
- Push bothersome cables aside if necessary.
- Press the ventilation duct and the fan into the casing in the direction of the arrow (2) so that the locking lugs are felt to engage.



The fan is properly engaged when the locking lug (1) protrudes slightly at the back of the casing.

- Connect the fan cable to the fan.



- ▶ Press the locking lug (1) of the ventilation duct in to the casing in the direction of the arrow so that the locking lug (1) hooks in.
- ▶ Close the casing (see "Closing the casing" chapter).

## Upgrading main memory

- ▶ Remove the ventilation duct (see the section "Removing ventilation duct").
- ▶ Upgrade the memory according to the description in the technical manual for the mainboard.
- ▶ Refit the ventilation duct (see section "Installing ventilation duct").
- ▶ Close the casing (see "Closing the casing" chapter).

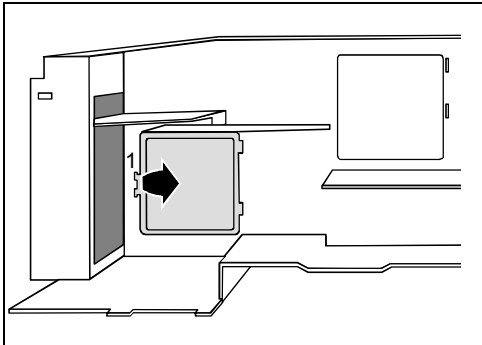
## Replacing processor

- ▶ Remove the ventilation duct (see the section "Removing ventilation duct").
- ▶ Upgrade the processor according to the description in the technical manual for the mainboard.
- ▶ Refit the ventilation duct (see section "Installing ventilation duct").
- ▶ Close the casing (see "Closing the casing" chapter).

## Installing second processor

The mainboard can be upgraded by a second processor if it is inserted into the slot for the second processor.

- ▶ Remove the ventilation duct (see the section "Removing ventilation duct").



- ▶ Open the tab (1) on the underside of the ventilation duct.
- ▶ Remove the blind cover of the ventilation duct in the direction of the arrow.

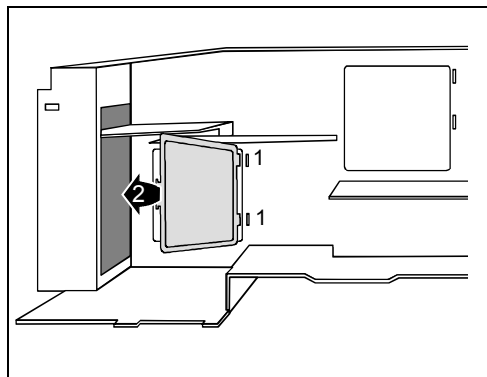


Do not throw away the blind cover. For cooling and protection against fire you must refit the cover if you remove the processor again later.

- ▶ Install the second processor as described in the technical manual for the mainboard.
- ▶ Refit the ventilation duct (see section "Installing ventilation duct").
- ▶ Close the casing (see "Closing the casing" chapter).

### Removing second processor

- ▶ Remove the ventilation duct (see the section "Removing ventilation duct").



- ▶ Hook the blind cover into the notches (1) of the ventilation duct.
- ▶ Fold the blind cover downward in the direction of the arrow (2).
- ▶ Press in the tab firmly.

- ▶ Remove the second processor as described in the technical manual for the mainboard.
- ▶ Refit the ventilation duct (see section "Installing ventilation duct").
- ▶ Close the casing (see "Closing the casing" chapter).

## Replacing lithium battery

In order to permanently save the system information, a lithium battery is installed to provide the CMOS-memory with a current. A corresponding error message notifies the user when the charge is too low or the battery is empty. The lithium battery must then be replaced.



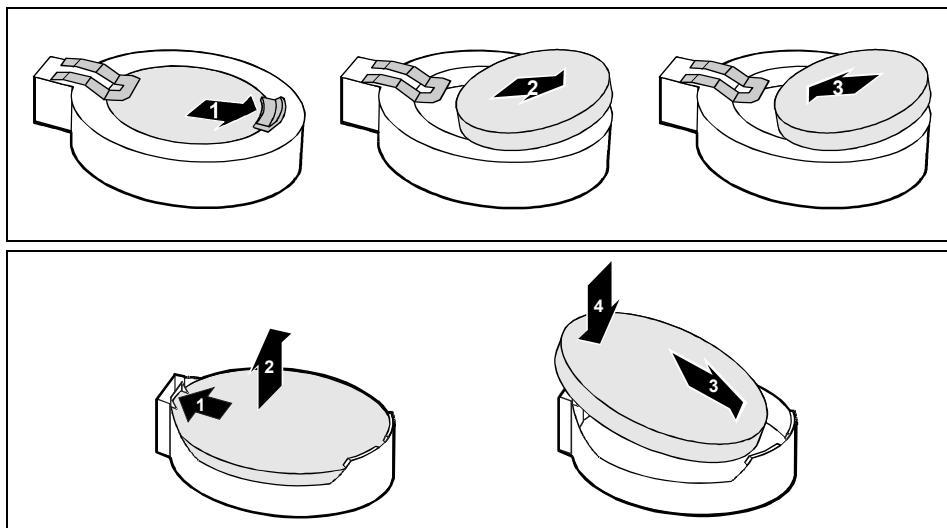
Incorrect replacement of the lithium battery may lead to a risk of explosion!

The lithium battery may be replaced only with an identical battery or with a type recommended by the manufacturer.

Do not throw lithium batteries into the household waste. They must be disposed of in accordance with local regulations concerning special waste.

Make sure that you insert the battery the right way round. The plus pole must be on the top!

The lithium battery holder exists in different designs that function in the same way.



- ▶ Remove the ventilation duct (see the section "Removing ventilation duct").
- ▶ Press the locking lug in the direction of the arrow; the battery jumps somewhat out of the holder (1).
- ▶ Remove the battery (2).
- ▶ Push the new lithium battery of the identical type into the holder (3) and press it downward until it engages (4).
- ▶ Refit the ventilation duct (see section "Installing ventilation duct").
- ▶ Close the casing (see "Closing the casing" chapter).



---

# Technical data

## Electrical data

Regulations complied with:	EN60950/VDE0805, UL 1950, CSA 22.2 No. 950
Protection class:	I
Rated voltage range:	100 V -240 V
Frequency:	50 - 60 Hz
Max. rated current:	100 V -127 V: 6 A 200 V - 240 V: 3 A

## Dimensions

Width/depth/height:	205 mm x 560 mm x 445 mm
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## Weight

with the basic configuration	approx. 25 kg
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## Environmental conditions

Environment class (3K2)	DIN IEC 721 part 3-3
Environment class (2K2)	DIN IEC 721 part 3-2

Temperature:	
• Operating (3K2)	15 °C ..... 35 °C
• Transport (2K2)	-25 °C ..... 60 °C

Condensation in operating must be avoided.

Clearance required to ensure adequate ventilation

• front	200 mm
• rear	200 mm





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